Service Manual

# Daqstation DX1000/DX1000N/DX2000

YOKOGAWA
Yokogawa Electric Corporation

SM 04L41B01-01E
4th Edition

## Important Notice to the User

- This manual contains information for servicing YOKOGAWA's DX1000, DX1000N, and DX2000. Check the serial number to confirm that this is the correct service manual for the instrument to be serviced. Do not use the wrong manual.
- Before any maintenance and servicing, read all safety precautions carefully.
- Only properly trained personnel may carry out the maintenance and servicing described in this service manual.
- Do not disassemble the instrument or its parts, unless otherwise clearly permitted by this service manual.
- Do not replace any part or assembly, unless otherwise clearly permitted by this service manual.
- In principle, Yokogawa Electric Corporation (YOKOGAWA) does not supply parts other than those listed in the customer maintenance parts list in this service manual (mainly modules and assemblies). Therefore if an assembly fails, the user should replace the whole assembly and not components within the assembly (see "Note"). If the user attempts to repair the instrument by replacing individual components within the assembly, YOKOGAWA assumes no responsibility for any consequences such as defects in instrument accuracy, functionality, reliability, or user safety hazards.
- YOKOGAWA does not offer more detailed maintenance and service information than that contained in this service manual.
- All reasonable efforts have been made to assure the accuracy of the content of this service manual. However, there may still be errors such as clerical errors or omissions. YOKOGAWA assumes no responsibility of any kind concerning the accuracy or contents of this service manual, nor for the consequences of any errors.
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***Note***

YOKOGAWA instruments have been designed in a way that the replacement of electronic parts can be done on an assembly (module) basis by the user. YOKOGAWA instruments have also been designed in a way that troubleshooting and replacement of any faulty assembly can be done easily and quickly. Therefore, YOKOGAWA strongly recommends replacing the entire assembly over replacing parts or components within the assembly. The reasons are as follows:

- The instruments use high-performance microprocessors, large scale CMOS gate arrays, and surface-mount components to provide state-of-the-art performance and functions.
- Repair of components can only be performed by specially trained and qualified maintenance personnel with special highly-accurate tools, including costly ones.
- When taking the service life and cost of the instruments into consideration, the replacement of assemblies offers the user the possibility to use YOKOGAWA instruments more effectively and economically with a minimum in downtime.

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## Revisions

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4th Edition: Jun. 2010

4th Edition: June 2010 (YK)
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## Introduction

This manual contains information for servicing YOKOGAWA's DX1000, DX1000N, and DX2000.

**WARNING**

This service manual is to be used by properly trained personnel only. To avoid personal injury, do not perform any servicing unless you are qualified to do so. Refer to the safety precautions prior to performing any servicing. Even if servicing is carried out according to this service manual, or by qualified personnel, YOKOGAWA assumes no responsibility for any result occurring from that servicing.

## Safety Standards and EMC Standards

The DX conforms to IEC safety class I (provided with terminal for protective grounding), Installation Category II, Measurement Category II (CAT II), and EN61326-1 (EMC standard), class A (use in a commercial, industrial, or business environment).
The DX is designed for indoor use.

## Safety Precautions

The general safety precautions described here must be observed during all phases of operation. If the DX is used in a manner not described in this manual, the protection provided by the DX may be impaired. Yokogawa Electric Corporation assumes no liability for the customer's failure to comply with these requirements.

**WARNING**

- **Use the Correct Power Supply**
  Ensure that the source voltage matches the voltage of the power supply before turning ON the power. In the case of a desktop type, ensure that it is within the maximum rated voltage range of the provided power cord before connecting the power cord.
- **Use the Correct Power Cord and Plug (Desktop Type)**
  To prevent electric shock or fire, be sure to use the power cord supplied by YOKOGAWA. The main power plug must be plugged into an outlet with a protective ground terminal. Do not disable this protection by using an extension cord without protective earth grounding.
- **Connect the Protective Grounding Terminal**
  Make sure to connect the protective grounding to prevent electric shock before turning ON the power.
  The power cord that comes with the desktop type is a three-prong type power cord. Connect the power cord to a properly grounded three-prong outlet.
- **Do Not Impair the Protective Grounding**
  Never cut off the internal or external protective grounding wire or disconnect the wiring of the protective grounding terminal. Doing so invalidates the protective functions of the instrument and poses a potential shock hazard.
- **Do Not Operate with Defective Protective Grounding**
  Do not operate the instrument if the protective grounding might be defective. Also, make sure to check them before operation.

- **Do Not Operate in an Explosive Atmosphere**
  Do not operate the instrument in the presence of flammable liquids or vapors. Operation in such an environment constitutes a safety hazard.
  Prolonged use in a highly dense corrosive gas ($H_2S$, SOx, etc.) will cause a malfunction.
- **Do Not Remove Covers**
  The cover should be removed by YOKOGAWA's qualified personnel only. Opening the cover is dangerous, because some areas inside the instrument have high voltages.
- **Ground the Instrument before Making External Connections**
  Connect the protective grounding before connecting to the item under measurement or control unit.
- **Damage to the Protection**
  Operating the instrument in a manner not described in this manual may damage the instrument's protection.
- **Pull Out the Inner Instrument Correctly**
  Pull out the inner instrument correctly according the instructions given in "Pulling Out the Inner Instrument (DX1000N)" in this manual.

## Safety Symbols Used on Equipment and in Manual

"Handle with care." To avoid injury and damage to the instrument, the operator must refer to the explanation in the manual.

Protective ground terminal

Functional ground terminal (do not use this terminal as a protective ground terminal.)

Alternating current

Direct current


ON (power)

OFF (power)

## Conventuins Used in Manual

**WARNING**
Calls attention to actions or conditions that could cause serious or fatal injury to the user, and precautions that can be taken to prevent such occurrences.

**CAUTION**
Calls attentions to actions or conditions that could cause light injury to the user or damage to the instrument or user's data, and precautions that can be taken to prevent such occurrences.

# Overview of This Manual

This manual is meant to be used by qualified personnel only. Make sure to read the safety precautions at the beginning of this manual as well as the warnings and cautions contained in the chapters relevant to any servicing you may be carrying out.

This manual contains the following chapters.

**Chapter 1** **Principles of Operation**
Describes the principles of operation of the instrument.

**Chapter 2** **Troubleshooting**
Lists problems that can occur and gives corrective actions.

**Chapter 3** **Testing**
Gives procedures for testing the characteristics of the instrument.

**Chapter 4** **Adjustments**
Explains how to adjust the instrument.

**Chapter 5** **Schematic Diagram**
Provides a system configuration diagram.

**Chapter 6** **Customer Maintenance Parts List**
Contains exploded views and a list of replaceable parts.

**Chapter 7** **Replacing Parts**
Describes how to replace parts. Also explains how to pull out the Inner Instrument of the DX1000N.

Specifications are not included in this manual. For specifications, refer to the DX1000/DX1000N User's Manual (IM 04L41B01-01E) and the DX2000 User's Manual (IM 04L42B01-01E).

### Revision History

| Edition | Description |
|---|---|
| 2 | Addition and improvements to functionality: 24 VDC/AC power supply (/P1 option) |
| 3 | Addition and improvements to functionality: PROFIBUS-DP (/CP1 option) and others |
| | Change of parts : LCD for the DX2000, CF assembly |
| | The size of the CF card supplied has been changed to 128 MB. |
| 4 | Compatible with CMPL04L41B01-01E 11th Edition, CMPL04L42B01-01E 11th Edition, and CMPL04L43B01-01E 11th Edition. |

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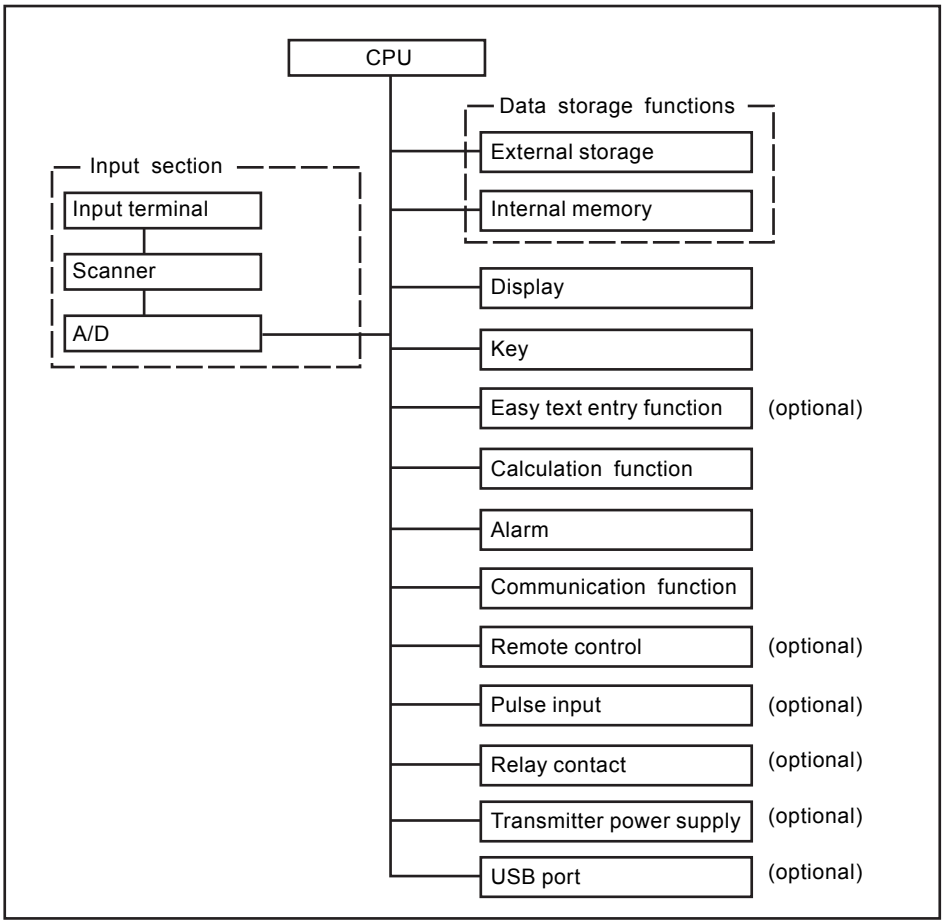
# 1.1 Principles of Operation

The following explains the principles of operation of the DX.

## Block Diagram




## Input Terminal Section

For connecting the measurement input signal wires. The terminals can be used for DC voltage, thermocouple, resistance temperature measurement, and contact input.

- The reference junction compensation circuit for thermocouples is built in.
- Proven transistor method for measuring the temperature of the terminals.
- Metal core construction used in the internal printed circuit boards to equalize temperature.
- Input terminals removable.

## Scanner Section

Switches the measured input signal (channel). The input signal switching section uses highly reliable solid state relays (SSR).

## A/D Conversion Section

Converts analog signals to digital signals. It is a PWM (pulse width modulation) type converter. A/D converter calibration data is stored in an EEPROM.

For the correspondence between input channels and A/D converters, see “Measurement Accuracy” on page 3-6.

## Saving Data

The capacity of the internal memory is either 80 MB (standard memory) or 200 MB (expansion memory).
The CF card can be used as an external memory medium.

## Display/Keys/Easy Text Entry

The DX uses an LCD display. You can control the DX with key operations. With Easy Text Entry (optional), you can control input by the remote control terminal.

## Calculation

You can calculate the difference between two measurement inputs, perform linear scaling, square roots, calibration correction, and other computations.

## Alarms

Alarm functions include upper limit alarm and lower limit alarm.

## Other Functions

### Serial/Ethernet Communication

The DX can communicate with other instruments via the Ethernet interface or the serial communication interface (optional).

### Remote Control/Pulse Input

Record start and other operations can be controlled using external signals (with the optional remote control function).
Counts the number of pulses for each measruement (with the pulse input option).

### Relay Output

The DX can output alarms or FAIL/Status (optional).

### Transmitter Power Supply Output

The DX can output 24 VDC for use as a power supply for transmitters (optional).

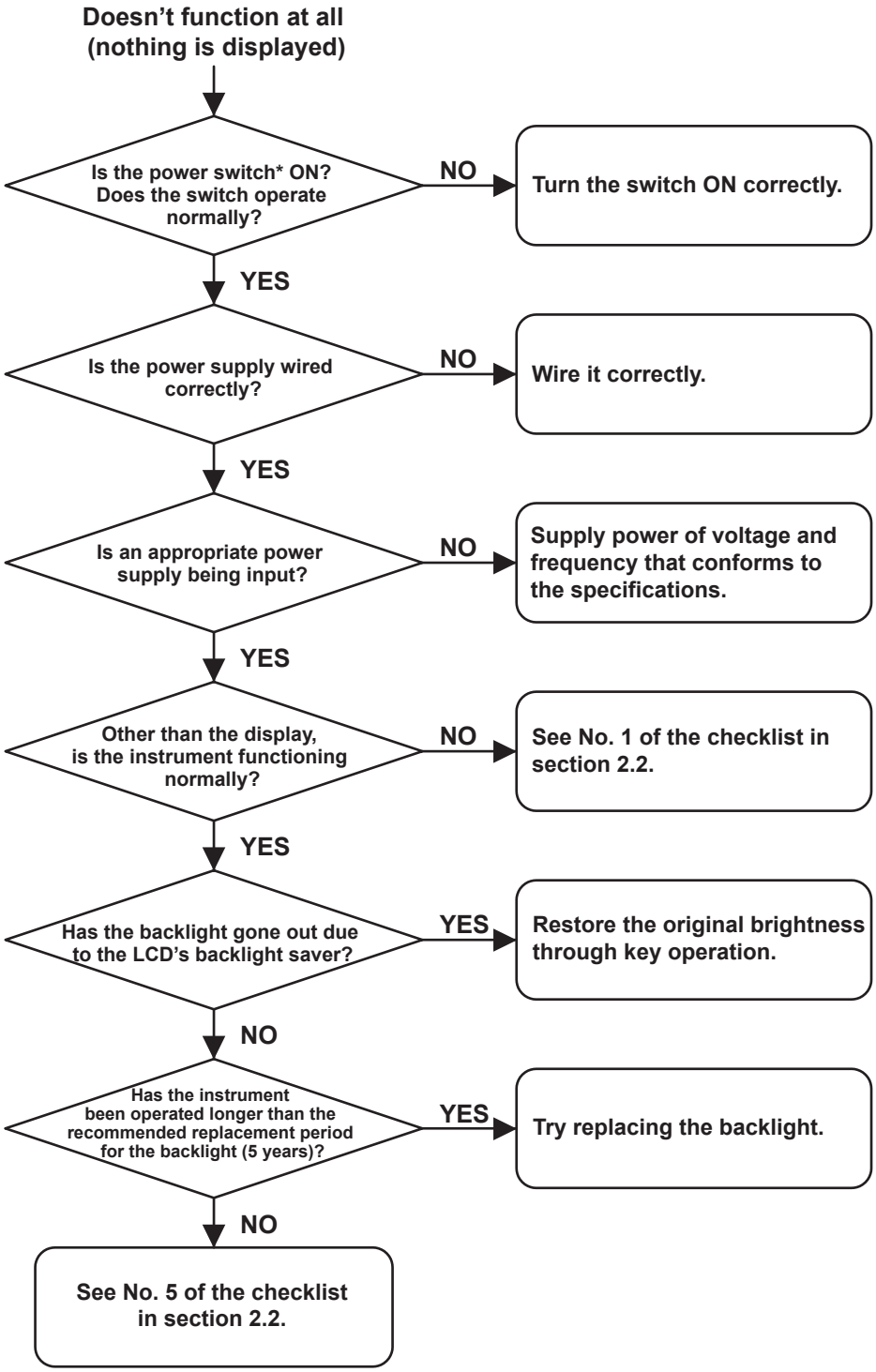
### USB Port

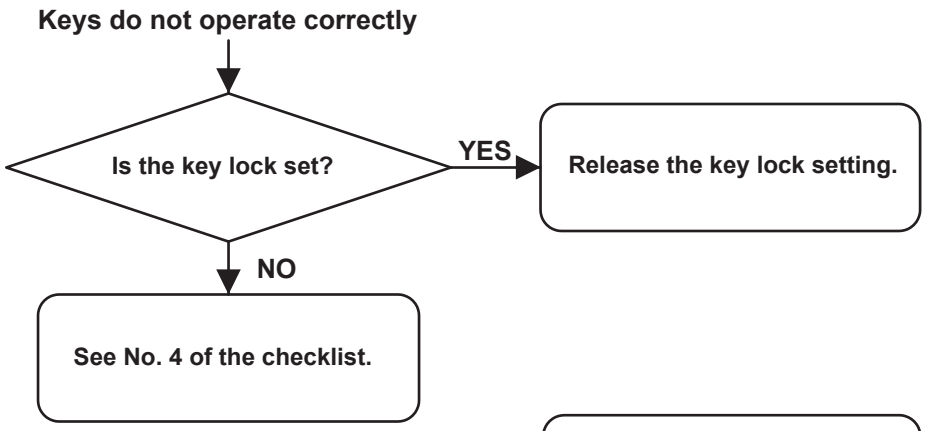
Allows connection with USB keyboard and USB flash memory devices (optional).

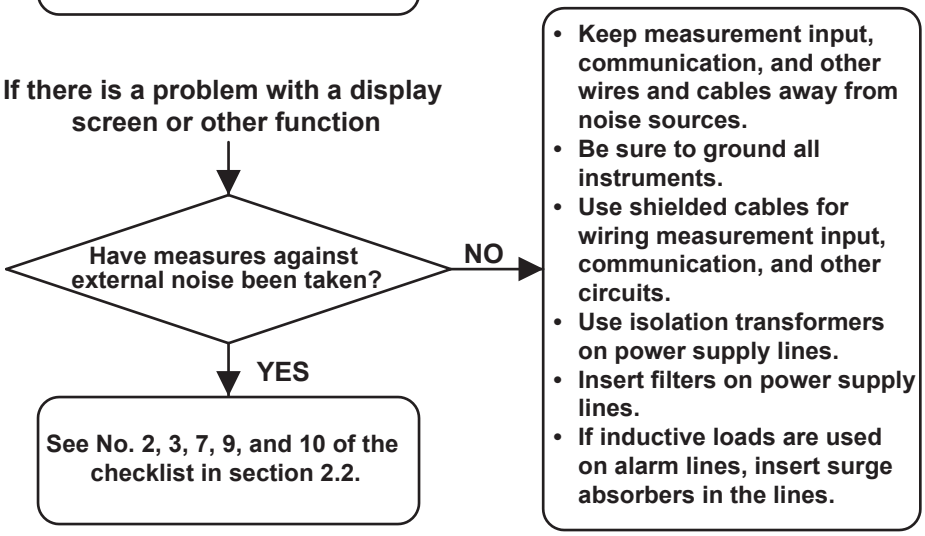
# 2.1 Failure Analysis Flow Chart



When a failure occurs, refer to the flow chart below for corrective actions.

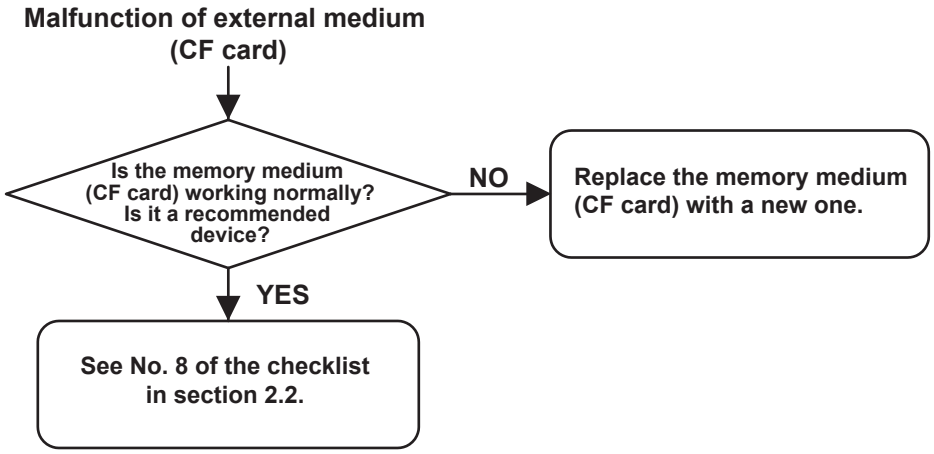


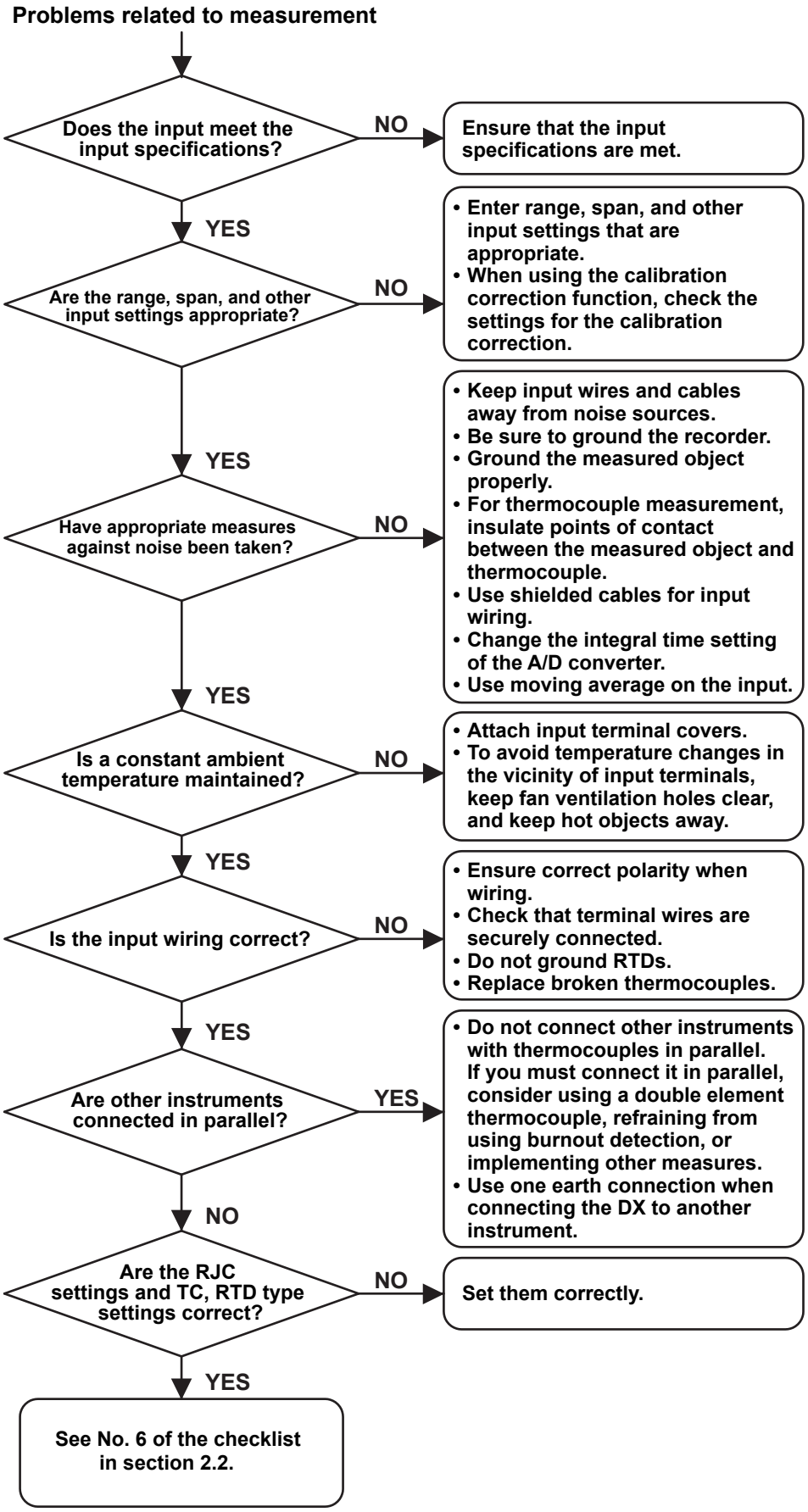



***Note***

If menu items required for screen menus or FUNC key menus are not displayed, check menu customization settings.




Problems related to measurement
Does the input meet the input specifications?
NO
Ensure that the input specifications are met.
YES
Are the range, span, and other input settings appropriate?
NO
• Enter range, span, and other input settings that are appropriate.
• When using the calibration correction function, check the settings for the calibration correction.
YES
Have appropriate measures against noise been taken?
NO
• Keep input wires and cables away from noise sources.
• Be sure to ground the recorder.
• Ground the measured object properly.
• For thermocouple measurement, insulate points of contact between the measured object and thermocouple.
• Use shielded cables for input wiring.
• Change the integral time setting of the A/D converter.
• Use moving average on the input.
YES
Is a constant ambient temperature maintained?
NO
• Attach input terminal covers.
• To avoid temperature changes in the vicinity of input terminals, keep fan ventilation holes clear, and keep hot objects away.
YES
Is the input wiring correct?
NO
• Ensure correct polarity when wiring.
• Check that terminal wires are securely connected.
• Do not ground RTDs.
• Replace broken thermocouples.
YES
Are other instruments connected in parallel?
YES
• Do not connect other instruments with thermocouples in parallel. If you must connect it in parallel, consider using a double element thermocouple, refraining from using burnout detection, or implementing other measures.
• Use one earth connection when connecting the DX to another instrument.
NO
Are the RJC settings and TC, RTD type settings correct?
NO
Set them correctly.
YES
See No. 6 of the checklist in section 2.2.

# 2.2 Troubleshooting Checklist

The table below describes the most common types of failures and their corrective actions.

| No. | Phenomenon | Action | | | Description | Refer to Chapter 6 | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Check | Adjust | Replace *1 | | Part Name | DX1000 | | DX1000N | | DX2000 | |
| | | | | | | | Page | Item | Page | Item | Page | Item |
| 1 | The instrument doesn't start even though the power is ON | ✓ | | | Power supply cable connection/wiring | - | - | - | - | - | - | - |
| | | | | ✓ | MAIN POWER BOARD ASSEMBLY | Power PBA | 6-4 | 4 | 6-13 | 3 | 6-23 | 6 |
| | | | | ✓ | MAIN BOARD ASSEMBLY | Main PBA | 6-4 | 12 | 6-13 | 14 | 6-23 | 18 |
| | | | | ✓ | SUB BOARD ASSEMBLY | Sub PBA EXP. BOOT | 6-4 | 13 | 6-13 | 15 | 6-23 | 19 |
| 2 | FAIL state | | | ✓ | MAIN BOARD ASSEMBLY | Main PBA | 6-4 | 12 | 6-13 | 14 | 6-23 | 18 |
| | | | | ✓ | SUB BOARD ASSEMBLY | Sub PBA EXP. BOOT | 6-4 | 13 | 6-13 | 15 | 6-23 | 19 |
| | | | | ✓ | OPTION TERMINAL ASSEMBLY | Option Terminal Assembly | 6-6 | 4 | 6-16 | 4 | 6-26 | 14, 17 20, 23 |
| 3 | Abnormal functioning of memory (backup) | ✓ | | | Battery connection | Battery Assembly | 6-4 | 14 | 6-13 | 16 | 6-23 | 20 |
| | | ✓ | | | Battery voltage (must be +3.0 V or more) | - | - | - | - | - | - | - |
| | | | | ✓ | MAIN BOARD ASSEMBLY | Main PBA | 6-4 | 12 | 6-13 | 14 | 6-23 | 18 |
| | | | | ✓ | SUB BOARD ASSEMBLY | Sub PBA EXP. BOOT | 6-4 | 13 | 6-13 | 15 | 6-23 | 19 |
| 4 | Key operation abnormality | ✓ | | ✓ | Check the FFCs*2 for key wiring (whether pulled out or damaged) | - | - | - | - | - | - | - |
| | | | | ✓ | SW & Sensor BOARD ASSEMBLY | Key Case Assembly | 6-3 | 14 | 6-12 | 20 | 6-22 | 4 |
| | | | | ✓ | CONNECTION BOARD ASSEMBLY | CONN. PBA | 6-3 | 6 | 6-12 | 7 | - | - |
| | | | | ✓ | MAIN BOARD ASSEMBLY | Main PBA | 6-4 | 12 | 6-13 | 14 | 6-23 | 18 |
| 5 | LCD display not normal | ✓ | | ✓ | Check the FFCs*2 for key wiring (whether pulled out or damaged) | - | - | - | - | - | - | - |
| | | | | ✓ | MAIN BOARD ASSEMBLY | Main PBA | 6-4 | 12 | 6-13 | 14 | 6-23 | 18 |
| | | | | ✓ | SUB BOARD ASSEMBLY | Sub PBA EXP. BOOT | 6-4 | 13 | 6-13 | 15 | 6-23 | 19 |
| | | | | ✓ | CONNECTION BOARD ASSEMBLY | CONN. PBA | 6-3 | 6 | 6-12 | 7 | - | - |
| | | | | ✓ | Back Light Unit of LCD ASSEMBLY | Back Light Unit | 6-3 | 3 | 6-12 | 4 | 6-22 | 3 |
| | | | | ✓ | LCD & INVERTER UNIT | LCD | 6-3 | 3 | 6-12 | 4 | 6-22 | 1 |
| 6 | Large measurement error Temperature measurement abnormal | ✓ | | | Keep input wires away from noise sources (through distance and shielding, etc.) | - | - | - | - | - | - | - |
| | | ✓ | | | Check that the input terminals are not disconnected from the instrument | - | - | - | - | - | - | - |
| | | ✓ | | | Check that the input terminal cover is not loose | - | - | - | - | - | - | - |
| | | ✓ | | | Check that the RJC (INT/EXT) setting is correct | - | - | - | - | - | - | - |
| | | | ✓ | ✓ | AD SCANNER BOARD ASSEMBLY | AD-STD/ ISO | 6-4 | 22 | 6-13 | 26 | 6-23 | 40, 41 42, 43 |
| 7 | Fluctuation in measured values | ✓ | | | Does the integral time setting of the A/D converter match the power supply frequency? | - | - | - | - | - | - | - |
| | | ✓ | | | Keep input wires away from noise sources (through distance and shielding, etc.) | - | - | - | - | - | - | - |

| No. | Phenomenon | Action | | | Description | Refer to Chapter 6 | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Check | Adjust | Replace *1 | | Part Name | DX1000 | | DX1000N | | DX2000 | |
| | | | | | | | Page | Item | Page | I tem | Page | Item |
| 8 | External media functioning abnormally | ✓ | | | Is the memory medium (CF card) working normally? | - | - | - | - | - | - | - |
| | | ✓ | | ✓ | Check the FFC*2 for the MEDIA BOARD ASSEMBLY (whether pulled out or damaged) | - | - | - | - | - | - | - |
| | | | | ✓ | MEDIA BOARD ASSEMBLY | CF Assembly | 6-4 | 26 | - | - | 6-23 | 45 |
| | | | | ✓ | SUB BOARD ASSEMBLY | Sub PBA EXP. BOOT | 6-4 | 13 | 6-13 | 15 | 6-23 | 19 |
| | | | | ✓ | MAIN BOARD ASSEMBLY | Main PBA | 6-4 | 12 | 6-13 | 14 | 6-23 | 18 |
| 9 | Abnormal communication | ✓ | | | Check communication settings | - | - | - | - | - | - | - |
| | | ✓ | | | Check communication wiring/cables (whether pulled out or damaged) | - | - | - | - | - | - | - |
| | | | | ✓ | POWER TERM & COMM BOARD ASSEMBLY | S/I-PWR Terminal | 6-6 | 8, 17 | 6-16 | 8 | 6-26 | 27, 38 |
| | | | | ✓ | MAIN BOARD ASSEMBLY | Main PBA | 6-4 | 12 | 6-13 | 14 | 6-23 | 18 |
| 10 | USB operation abnormal | ✓ | | | Are connected USB devices (USB memory and USB keyboard) operating normally? | - | - | - | - | - | - | - |
| | | ✓ | | ✓ | Check the FFC*2 for the MEDIA BOARD ASSEMBLY (whether pulled out or damaged) | - | - | - | - | - | - | - |
| | | | | ✓ | MEDIA BOARD ASSEMBLY (front panel) | CF Assembly | 6-4 | 26 | - | - | 6-23 | 45 |
| | | | | ✓ | POWER TERM & COMM BOARD ASSEMBLY (rear panel) | S/I-PWR Terminal | 6-6 | 8, 17 | 6-16 | 8 | 6-26 | 27, 38 |
| | | | | ✓ | SUB BOARD ASSEMBLY | Sub PBA EXP. BOOT | 6-4 | 13 | 6-13 | 15 | 6-23 | 19 |
| | | | | ✓ | MAIN BOARD ASSEMBLY | Main PBA | 6-4 | 12 | 6-13 | 14 | 6-23 | 18 |

*1: The table shows only the specific parts that must be replaced. When actually carrying out replacement, the entire assembly that contains a part may have to be replaced.

*2: Flexible Flat Cable

# 3.1 Acceptance Test

This section describes the procedure to perform the acceptance test.

1. Read the preface to the user's manual, "Checking the Contents of the Package" and verify that you have all of the contents.
2. Make sure to understand the operating procedures as described in the user's manual.
3. Check each function using the user's manual.
4. Read and implement section 3.2, "Self Diagnostic Test."
5. Read and implement section 3.3, "Performance Test."

# 3.2 Self Diagnostic Test

The DX is provided with complete self diagnostic functions to enhance reliability in measurement and serviceability.
When you turn ON* the power, the DX will automatically execute the following types of diagnoses alternately and display the results. After these tests are completed, the recorder is ready for use.

* The DX1000N power supply switch is located inside the bezel. Disconnect then reconnect the power supply, or open the bezel and operate the power supply switch (see section 7.3).

1. Main program (Flash ROM) test
2. Main RAM write/read test
3. A/D and A/D EEPROM test
4. Memory acquisition test (write test from Flash)
5. Ethernet module test

The table below shows the results of the self diagnostic tests when a problem is detected.

| Display upon Error | | Likely Cause | Refer to Chapter 6 | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | Part Name | DX1000 | | DX1000N | | DX2000 | |
| | | | | Page | Item | Page | Item | Page | Item |
| 901<br>902 | ROM failure.<br>RAM failure. | Connection between MAIN BOARD ASSEMBLY and SUB BOARD ASSEMBLY | | – | – | – | – | – | – |
| | | Replace the SUB BOARD ASSEMBLY or MAIN BOARD ASSEMBLY | Sub PBA EXP.BOOT | 6-4 | 13 | 6-13 | 15 | 6-23 | 19 |
| | | | Main PBA | 6-4 | 12 | 6-13 | 14 | 6-23 | 18 |
| 910 | A/D memory failure for all input channels. | Connection between AD SCANNER BOARD ASSEMBLY and MAIN BOARD ASSEMBLY | – | – | – | – | – | – | – |
| 921 | A/D calibration value error. | Replace the AD SCANNER BOARD ASSEMBLY or MAIN BOARD ASSEMBLY | AD-STD/ ISO | 6-4 | 22 | 6-13 | 26 | 6-23 | 40, 41, 42, 43 |
| | | | Main PBA | 6-4 | 12 | 6-13 | 14 | 6-23 | 18 |
| 930 | Memory acquisition failure. | Connection between MAIN BOARD ASSEMBLY and SUB BOARD ASSEMBLY | – | – | – | – | – | – | – |
| | | Replace the SUB BOARD ASSEMBLY or MAIN BOARD ASSEMBLY | Sub PBA EXP.BOOT | 6-4 | 13 | 6-13 | 15 | 6-23 | 19 |
| | | | Main PBA | 6-4 | 12 | 6-13 | 14 | 6-23 | 18 |
| | | Replace the internal CF card | CF Assembly | 6-4 | 26 | – | – | 6-23 | 47 |
| 940 | The Ethernet module is down. | Check communication settings | – | – | – | – | – | – | – |
| | | Connection between POWER TERM & COMM BOARD ASSEMBLY and MAIN BOARD ASSEMBLY | – | – | – | – | – | – | – |
| | | Check the communication cables and LINK LED illumination | – | – | – | – | – | – | – |
| | | Replace the MAIN BOARD ASSEMBLY | Main PBA | 6-4 | 12 | 6-13 | 14 | 6-23 | 18 |
| | | or POWER TERM & COMM BOARD ASSEMBLY | S/I-PWR Terminal | 6-6 | 8,17 | 6-16 | 8 | 6-26 | 27,38 |

# 3.3 Performance Test

Read the warning and cautions below before beginning tests.

## Test Environment

| Item | Conditions | |
|---|---|---|
| Ambient temperature | 23 ±5°C | |
| Relative humidity | 20 to 80% RH | |
| Atmospheric pressure | 86 kPa-106 kPa | |
| Power supply voltage | AC power supply | 90 to 132 VAC, 180 to 250 VAC |
| | 24 V power supply | 21.6 to 26.4 VAC/DC (/P1 option) |
| Power supply frequency | Nominal frequency ±1% | |
| Power supply waveform | Distortion factor of 5% or less | |
| DC power supply ripple | Content ratio of 0.1% or less | |
| Vibration | A value having negligible effects on the instrument | |
| Position | Within ±3% of the specified position | |
| Interference*1 | A value that does not affect the measured results | |
| Electrical field | A value that does not affect the measured results | |
| Magnetic field | A value that does not affect the measured results | |
| Atmospheric pollutants | Levels of corrosive gasses, vapors, salts, and dust that do not affect the measured results. | |
| Other external effects*2 | A value that does not affect the measured results | |

*1 Interference refers to common mode noise, series mode noise, power supply noise, and other phenomena in the signal line.

*2 Other external effects include luminance, draft, ultrasonic waves, and radiation.

## Test Instruments

| Instrument | Specifications |
|---|---|
| DC voltage generator | Accuracy: ±0.005% of setting + 1 μV |
| DMM | Accuracy: ±0.005% of rdg + 1 μV |
| Variable resistors | Accuracy: 0.01% + 2 mΩ or better |
| Insulation tester | 500 VDC |
| Withstand voltage tester | 500 to 2300 VAC, 1000 VDC |
| Function generator | Accuracy: ±20ppm of setting for 100 Hz |
| 0°C standard temperature device | Accuracy: ±0.05°C |
| Thermocouple (Type T) | Calibrated |

## Instrument Operation

For operating procedures in setting mode and basic setting mode, see the following manuals.

- DX1000/DX1000N Operation Guide (IM 04L41B01-02E)
- DX1000/DX1000N User's Manual (IM 04L41B01-01E)
- DX2000 Operation Guide (IM 04L42B01-02E)
- DX2000 User's Manual (IM 04L42B01-01E)

## Tests

The following tests are explained.

- Insulation Resistance
- Protective Grounding
- Withstand Voltage
- Measurement Accuracy
- Reference Junction Compensation Accuracy
- Battery Backup
- Pulse Input Function (Option)

# 3.4 Test Procedures

## Insulation Resistance

- **Test Procedures**

  Perform a measurement with an insulation resistance meter and check whether the results satisfy the reference values. Perform the measurement with the power switch turned ON.

**Reference Value**

| Terminals Measured | Reference Value | Condition |
|---|---|---|
| Between the power and protective ground terminal | 100 MΩ or more | Short the L and N terminals. |
| Between the input and protective ground terminal | 100 MΩ or more | Short all input terminals. |
| Between the Ethernet and protective ground terminal | 100 MΩ or more | Short all pins of the Ethernet terminal. |
| Between RS-422/485 SG and RS-422/485 FG terminals | 100 MΩ or more | With the /C3 option. |

## Protective Grounding

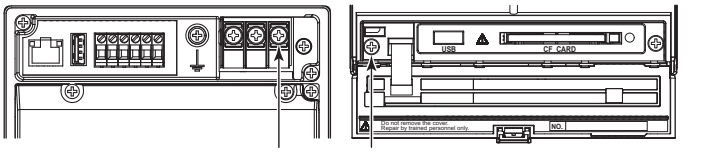
- **Test Procedures**

  Perform a resistance measurement with a DMM (digital multimeter), and check whether the results satisfy the reference values.

**Reference Value**

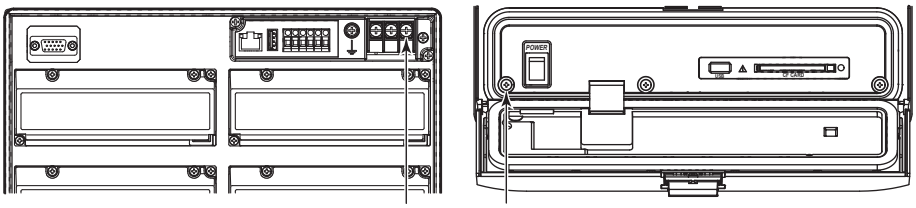
| Measured Location | Reference Value |
|---|---|
| Between the protective ground terminal and bezel attachment screw (left side) | 0.2 Ω or less |

**DX1000/DX1000N**




**Protective ground terminal** **Bezel attachment screw (left side)**

**DX2000**




**Protective ground terminal** **Bezel attachment screw (left side)**

## Withstand Voltage

- **Test Procedures**

  Perform the test with a withstanding voltage tester, and check whether the results satisfy the reference values. Perform the measurement with the power switch turned ON.

**Test time: 1 minute**

| Tested Terminals | Applied Voltage | Maximum Allowable Leakage Current | Condition |
|---|---|---|---|
| Between the power and protective ground terminals | 2.3 kVAC | 10 mA | When /P1 not installed (100–240 VAC). Short the L and N terminals. |
| | 0.5 KVAC | 10 mA | With /P1 (24 VAC/DC). Short the L (+) and N (–) terminals. |
| Between the input and protective ground terminals | 1.5 kVAC | 2 mA | Short all input terminals. |
| Between input terminals | 1.0 kVAC | 1 mA | Short the odd and even channels of the A/+, B/- terminals*, and measure between odd and even channels. |
| Between relay contact output and protective ground terminals | 1.6 kVAC | 2 mA | With the /A1, /A2, /A3, /A4, /A5 /F1, or /F2 option. Short all relay contact output terminals. |
| Between the remote control input and protective ground terminals | 1.0 kVDC | 2 mA | With the /R1 option. Short all remote control input terminals. |
| Between pulse input and protective ground terminals | 1.0 kVDC | 2 mA | With the /PM1 option. Short all pulse input terminals. |
| Between 24 V transmitter power supply output and protective ground terminals | 500 VAC | 10 mA | With the /TPS2, /TPS4, or /TPS8 option. Short all 24 V transmitter power supply output terminals. |

* The b terminals on the following models are independent on all channels. Short the odd and even channels of the A/+, B/-, and b terminals, and measure between odd and even channels.

- DX1002, DX1002N, DX1004, DX1004N, DX2004, DX2008
- With the /N1 or /N2 option.

## Measurement Accuracy

### ● Overview

The measurement accuracy is tested using two different* integral times.

* But only one integral time is used when using the DX2000 with the /MC1 option.

The measurement accuracy test is performed in one of the following ways.

- One representative channel for each A/D converter is tested, and the channel-to-channel error between the representative channel and other channels is tested (see next page).
  * Choose any channel number for each A/D from those listed in the A/D converter configuration table.
  Ex.: With the DX1004, set channels 1 and 3 as representative channels.
- The measuring accuracy of all channels is tested separately.

### ● A/D Converter Configuration

| Models | Measurement Interval | Number of Channels | No. of A/Ds | Channel Number by A/D |
|---|---|---|---|---|
| DX1002/DX1002N | 125 ms | 2CH | 1 | 1-2 |
| DX1004/DX1004N | 125 ms | 4CH | 2 | 1-2, 3-4 |
| DX1006/DX1006N | 1 s | 6CH | 1 | 1-6 |
| DX1012/DX1012N | 1 s | 12CH | 1 | 1-12 |
| DX2004 | 125 ms | 4CH | 2 | 1-2, 3-4 |
| DX2008 | 125 ms | 8CH | 4 | 1-2, 3-4, 5-6, 7-8 |
| DX2010 | 1 s | 10CH | 1 | 1-10 |
| DX2020 | 1 s | 20CH | 2 | 1-10, 11-20 |
| DX2030 | 1 s | 30CH | 3 | 1-10, 11-20, 21-30 |
| DX2040 | 1 s | 40CH | 4 | 1-10, 11-20, 21-30, 31-40 |
| DX2048 | 1 s | 48CH | 4 | 1-12, 13-24, 25-36, 37-48 |

### ● Test Instruments

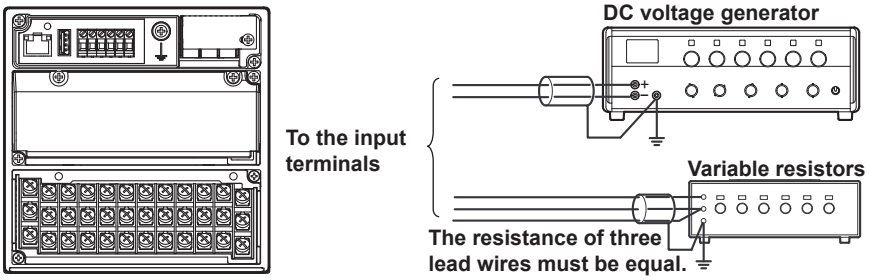
| Instrument | Specifications |
|---|---|
| DC voltage generator | Accuracy: ±0.005% of setting + 1 µV |
| DMM | Accuracy: ±0.005% of rdg + 1 µV |
| Variable resistors | Accuracy: 0.01% + 2 mΩ or better |

### ● Setup

Set the input range of the channels under test, and the test range.

### ● Test Procedures

Warm up the instrument for thirty minutes before performing the test.
Enter the input value determined for each range. Check whether the displayed measured values satisfy the reference values.



**Reference Value (Integral Time: 20 ms (50 Hz)/16.7 ms (60 Hz))**

| Range | Input Value | Range Allowed by Test | Accuracy Specification | Note |
|---|---|---|---|---|
| 20 mV | +20.000 mV | ±18 digits | (0.05% of rdg + 12 digits) | |
| | 0.000 mV | ±10 digits | | |
| | –20.000 mV | ±18 digits | | |
| 60 mV | +60.00 mV | ±5 digits | (0.05% of rdg + 3 digits) | |
| | 0.00 mV | ±2 digits | | |
| | –60.00 mV | ±5 digits | | |
| 200 mV | +200.00 mV | ±10 digits | (0.05% of rdg + 3 digits) | |
| | 0.00 mV | ±2 digits | | |
| | –200.00 mV | ±10 digits | | |
| 2 V | +2.0000 V | ±18 digits | (0.05% of rdg + 12 digits) | |
| | 0.0000 V | ±10 digits | | |
| | –2.0000 V | ±18 digits | | |
| 6 V | +6.000 V | ±5 digits | (0.05% of rdg + 3 digits) | |
| | 0.000 V | ±2 digits | | |
| | –6.000 V | ±5 digits | | |
| 20 V | +20.000 V | ±10 digits | (0.05% of rdg + 3 digits) | |
| | 0.000 V | ±2 digits | | |
| | –20.000 V | ±10 digits | | |
| 50 V | +50.00 V | ±4 digits | (0.05% of rdg + 3 digits) | |
| | 0.00 V | ±2 digits | | |
| | –50.00 V | ±4 digits | | |
| Pt100 | –200°C: 18.52 Ω | ±0.4°C | (0.15% of rdg + 0.3°C) | |
| | 0°C: 100.00 Ω | ±0.2°C | | |
| | 600°C: 313.71 Ω | ±0.9°C | | |
| TC-T | 0°C: 0.000 mV | ±0.4°C | (0.15% of rdg + 0.5°C) | EXT RJC mode |
| TC-K | 0°C: 0.000 mV | ±0.5°C | (0.15% of rdg + 0.7°C) | EXT RJC mode |
| Cu10 (GE) | –200°C: 1.326 Ω | ±1.4°C | (0.4% of rdg + 1.0°C) | Performed when the /N1 option is specified. |
| | 0°C: 9.036 Ω | ±0.8°C | | |
| | 300°C: 20.601 Ω | ±1.7°C | | |
| Pt50 | –200°C: 8.57 Ω | ±0.8°C | (0.3% of rdg + 0.6°C) | Performed when the /N3 option is specified. |
| | 0°C: 50.00 Ω | ±0.4°C | | |
| | 550°C: 150.40 Ω | ±1.8°C | | |

**Reference Value (Integral Time: 1.67 ms (600 Hz))**

| Range | Input Value | Range Allowed by Test | Accuracy Specification |
|---|---|---|---|
| 2 V | +2.0000 V | ±57 digits | (0.1% of rdg + 40 digits) |
| | 0.0000 V | ±32 digits | |
| | –2.0000 V | ±57 digits | |

* Not tested for the DX2000 with the /MC1 option.

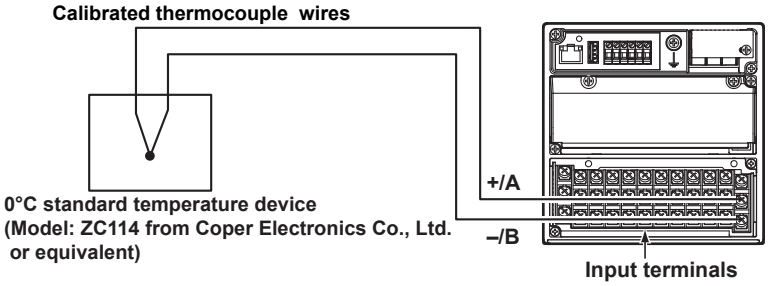
## Reference Junction Compensation Accuracy

### ● Test Procedures

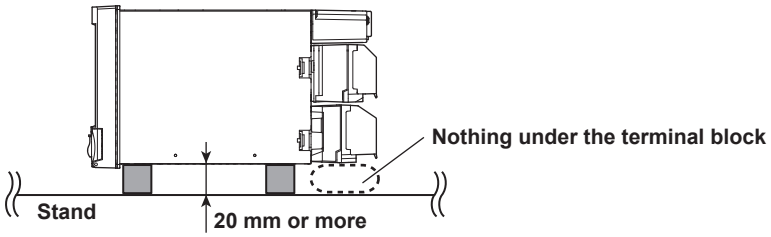
Measure 0°C on all channels, and check that the display is within the reference values below.

Set all channels to thermocouple type T.

**Reference value: ±0.5°C**




- Use a calibrated thermocouple, and wires of 0.5 diameter or less without terminal tips. Also, be sure to take the level of thermocouple error into consideration during testing.
- Monitor the 0°C standard temperature device at all times, and confirm that it is within 0°C ±0.05°C.
- When using a 0°C standard temperature device, ensure that the tip of the thermocouple floats about 10 mm off the bottom.
- Perform the test in a stable environment. If drafts are present and may influence the results, position the equipment to avoid them.
- After connecting the thermocouple, allow a warm-up time of 30 minutes or more before begging measurement.
- Always use terminal covers.
- If the quality is found to be sufficiently stable, perform a test on one representative channel for each AD converter*.
  * Choose any channel number for each A/D from those listed in the “A/D Converter Configuration” in section 3.4, “Measurement Accuracy.”
    Ex.: With the DX1004, set channels 1 and 3 as representative channels.
- Raise the DX at least 20 mm off the surface (stand) where it is positioned, and place nothing under the terminal block.




## Battery Backup

### ● Test Procedures

***1.*** Set the date and time. Also, set an arbitrary channel to the 20 mV range.

***2.*** Turn OFF* the power switch.
  * The DX1000N power supply switch is located inside the bezel. Disconnect then reconnect the power supply, or open the bezel and operate the power supply switch (see section 7.3).

***3.*** Turn ON the power after approximately one minute, then check that the set date, time, and range are not initialized.

## Pulse Input Function

- **Overview**
  This test performed when the /PM1 option is specified. Enter calculation settings, input a pulse signal, and perform the test.

- **Test Instruments**

| Instrument | Specifications |
|---|---|
| Function generator | Accuracy: ±20ppm of setting for 100 Hz |

- **Setup**
  1. Press the **MENU key**, then choose **Math channel** > **Calculation expression (Expression)**.
  2. Enter the following expressions. Press the **ESC key** to return to the setting menu.
     - 101CH: Q06 (span: 0-100)
     - 102CH: Q07 (span: 0-100)
     - 103CH: Q08 (span: 0-100)
  3. Select **Group set**, then set **CH set** to 101-103.
  4. Press the **ESC key** twice to return to operation mode.

- **Test Procedures**
  Input a pulse signal of 100 Hz and 0-5 V to input pulse terminals 6, 7, and 8, then perform the test.

  **Reference value: 100 ±1**

# 4.1 Before Making Adjustments

This chapter explains how to perform adjustments to the DX1000/DX1000N/DX2000.

## Environment

See section 3.3, “Test Environment.”

## Instrument Operation

For operating procedures in setting mode and basic setting mode, see the following manuals.

- DX1000/DX1000N Operation Guide (IM 04L41B01-02E)
- DX1000/DX1000N User’s Manual (IM 04L41B01-01E)
- DX2000 Operation Guide (IM 04L42B01-02E)
- DX2000 User’s Manual (IM 04L42B01-01E)

## Note

Adjustments are to be made after warming up the recorder for at least thirty minutes.

# 4.2 Adjusting the A/D Converters

## ● Overview

The number of included A/D converters differs depending on the instrument model. For all of the A/D converters, input a predetermined value for each range and take measurements, then save the calibration values.

## ● Instruments Used

| Instrument | Specifications |
|---|---|
| DC voltage generator | Accuracy: ±0.005% of setting + 1 μV or better |
| Variable resistors | Accuracy: 0.01% + 2 mΩ or better |

## ● Calibration

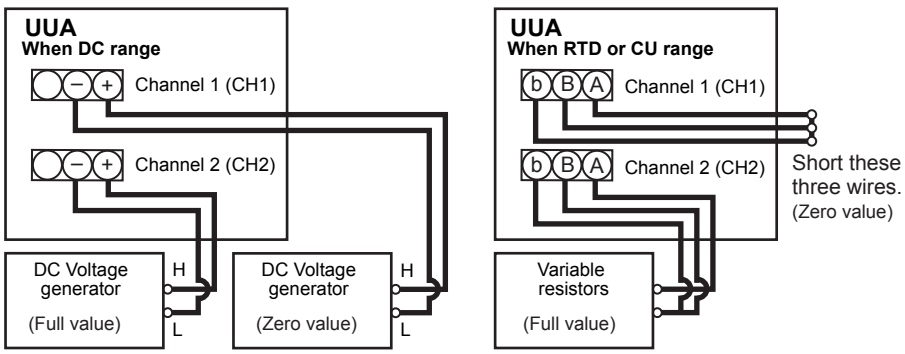
### Calibrated Channels

| Model | A/D No. 1 | | A/D No. 2 | | A/D No. 3 | | A/D No. 4 | |
|---|---|---|---|---|---|---|---|---|
| | Zero | Full | Zero | Full | Zero | Full | Zero | Full |
| DX1002/DX1002N | CH1 | CH2 | - | - | - | - | - | - |
| DX1004/DX1004N | CH1 | CH2 | CH3 | CH4 | - | - | - | - |
| DX1006/DX1006N | CH1 | CH2 | - | - | - | - | - | - |
| DX1012/DX1012N | CH1 | CH2 | - | - | - | - | - | - |
| DX2004 | CH1 | CH2 | CH3 | CH4 | - | - | - | - |
| DX2008 | CH1 | CH2 | CH3 | CH4 | CH5 | CH6 | CH7 | CH8 |
| DX2010 | CH1 | CH2 | - | - | - | - | - | - |
| DX2020 | CH1 | CH2 | CH11 | CH12 | - | - | - | - |
| DX2030 | CH1 | CH2 | CH11 | CH12 | CH21 | CH22 | - | - |
| DX2040 | CH1 | CH2 | CH11 | CH12 | CH21 | CH22 | CH31 | CH32 |
| DX2048 | CH1 | CH2 | CH13 | CH14 | CH25 | CH26 | CH37 | CH38 |

### Input Value

| Input Type | Range | Zero | Full | Remarks |
|---|---|---|---|---|
| DC voltage | 20 mV | 0 mV | 20 mV | |
| | 60 mV | 0 mV | 60 mV | |
| | 200 mV | 0 mV | 200 mV | |
| | 1 V | 0 mV | 1 V | |
| | 2 V | 0 mV | 2 V | |
| | 6 V | 0 mV | 6 V | |
| | 20 V | 0 mV | 20 V | |
| | 50 V | No adjustment needed | | |
| RTD | Pt100 | 0 Ω | 300 Ω | |
| | Cu10 | 0 Ω | 200 Ω | With the /N1 or /N3 option. |

### Connection




**UUA: Unit Under Adjustment**

## ● Calibration Procedure

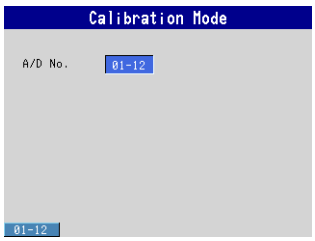
***1.*** Press the **UP arrow key** while turning ON* the power.

The instrument starts up in **Calibration Mode**, and the **A/D No.** are displayed.

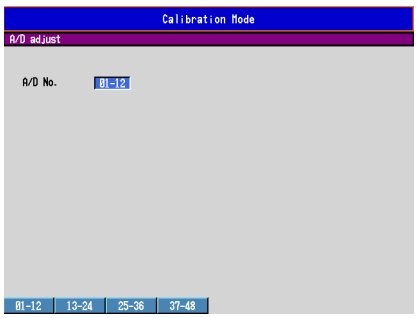
* The DX1000N power supply switch is located inside the bezel. Disconnect then reconnect the power supply, or open the bezel and operate the power supply switch (see section 7.3).

***2.*** Select the **A/D No.** to calibrate with a soft key, then press the **DISP/ENTER key**.

**DX1000/DX1000N**

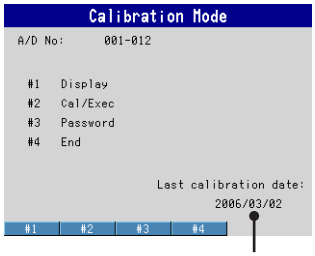



**DX2000**




***3.*** Press the **Cal/Exec** #2 soft key.

**DX1000/DX1000N**




Shows the day the A/D most recently adjusted

**DX2000**

### Inputting a Reference Signal

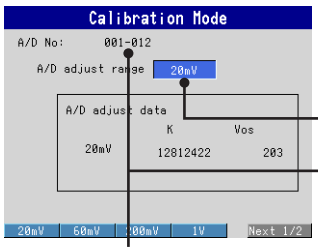
***4.*** Input the zero value of the range to be adjusted to the zero channel of the A/D No., and the full value to the Full channel. See the calibration channels and input values on the previous page.

Ex.: To adjust the 20 mV range of A/D No. 1, input 0 mV to CH1, and 20 mV to CH2.

### Executing the Adjustment

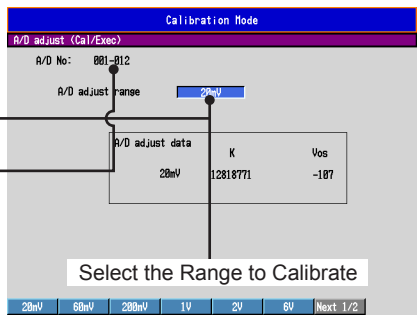
***5.*** Select the soft key of the range to adjust, then press the **DISP/ENTER key**.

**DX1000/DX1000N**




Shows the A/D No. being calibrated

**DX2000**




Select the Range to Calibrate

A message is displayed, and adjustment executes automatically.

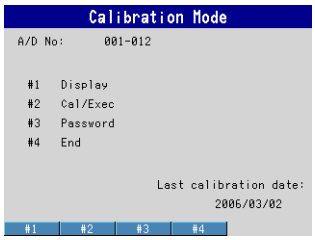
```
M550
The A/D calibration is being
executed...
```

***6.*** Repeat steps ***4*** and ***5*** to adjust all ranges.

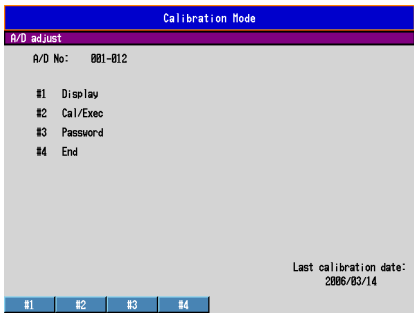
When finished, press the **ESC key**.

***7.*** Press the **End** #4 soft key.

**DX1000/DX1000N**



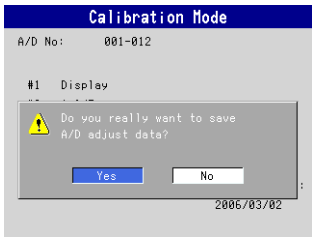

**DX2000**



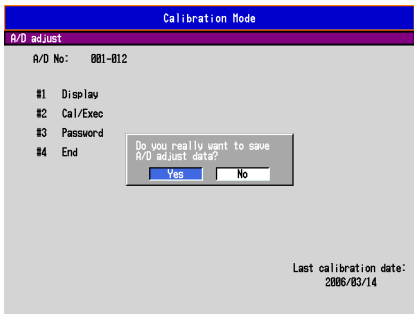

### Saving Adjusted Values

***8.*** Use the **left** or **right arrow key** to choose **Yes** (save calibration values) or **No** (do not save), then press the **DISP/ENTER key**.

**DX1000/DX1000N**




**DX2000**




***9.*** Repeat steps ***2*** – ***8*** to adjust all **A/D No.**
When finished, press the **ESC key**.

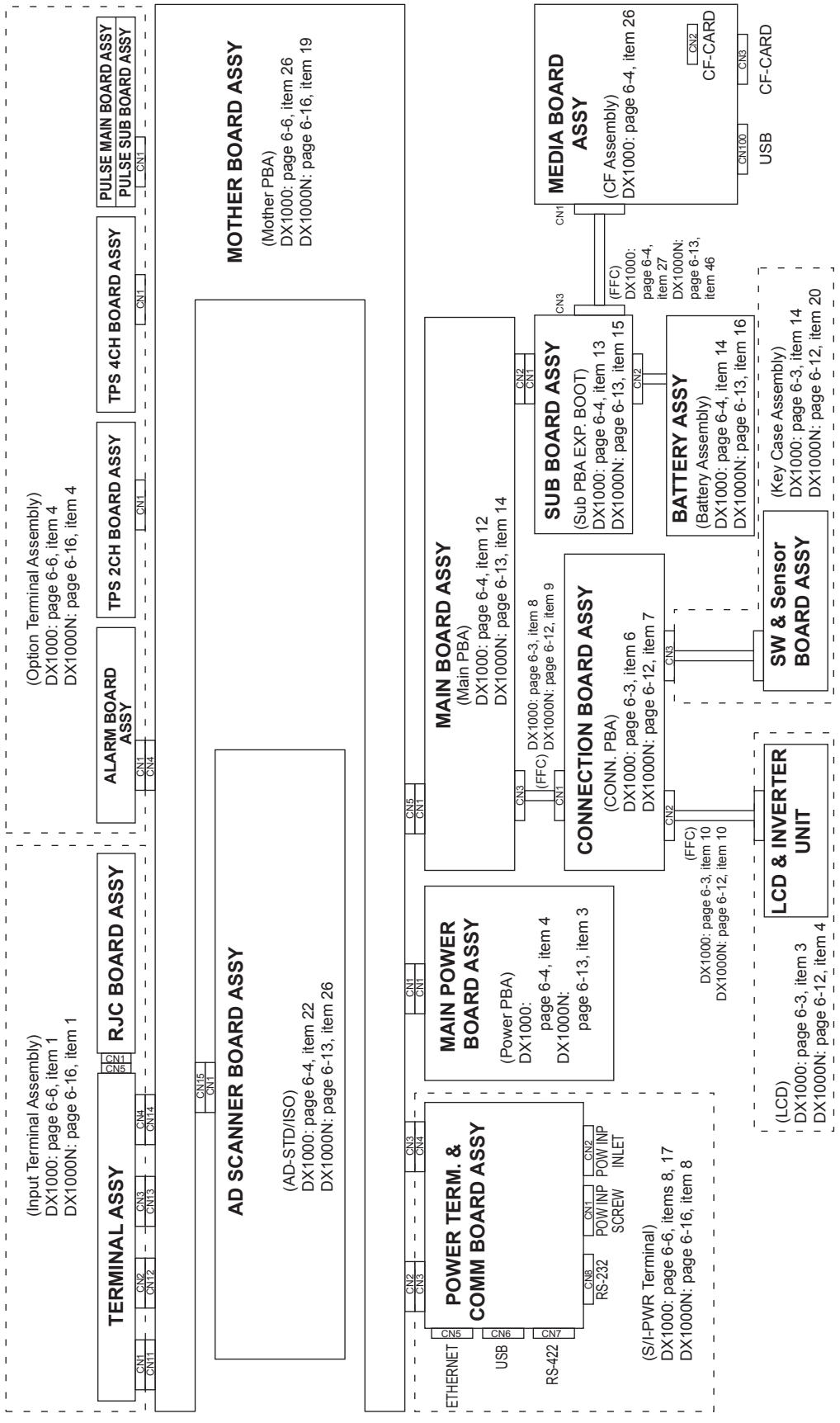
### Concluding Adjustments

***10.*** Turn OFF the power switch.

## *Note*

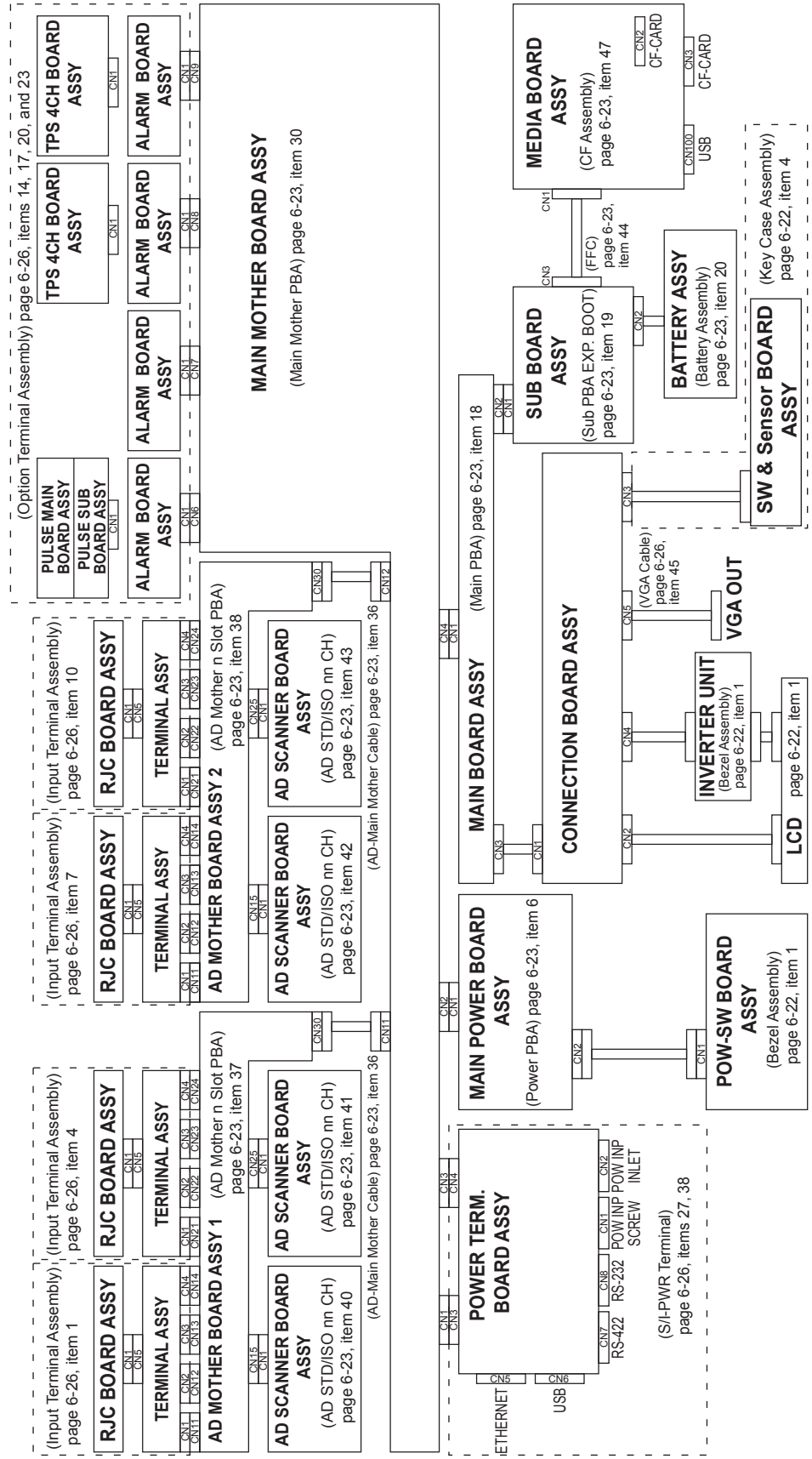
After adjusting the DX1000N, turn ON the power switch then close the bezel. If the power switch is OFF when you close the bezel, you will have to open it again the next time you use the instrument.

# 5.1 Schematic Diagram (DX1000/DX1000N)




The parentheses ( ) contain the descriptions from chapter 6.

# 5.2 Schematic Diagram (DX2000)




The parentheses ( ) contain the descriptions from chapter 6.

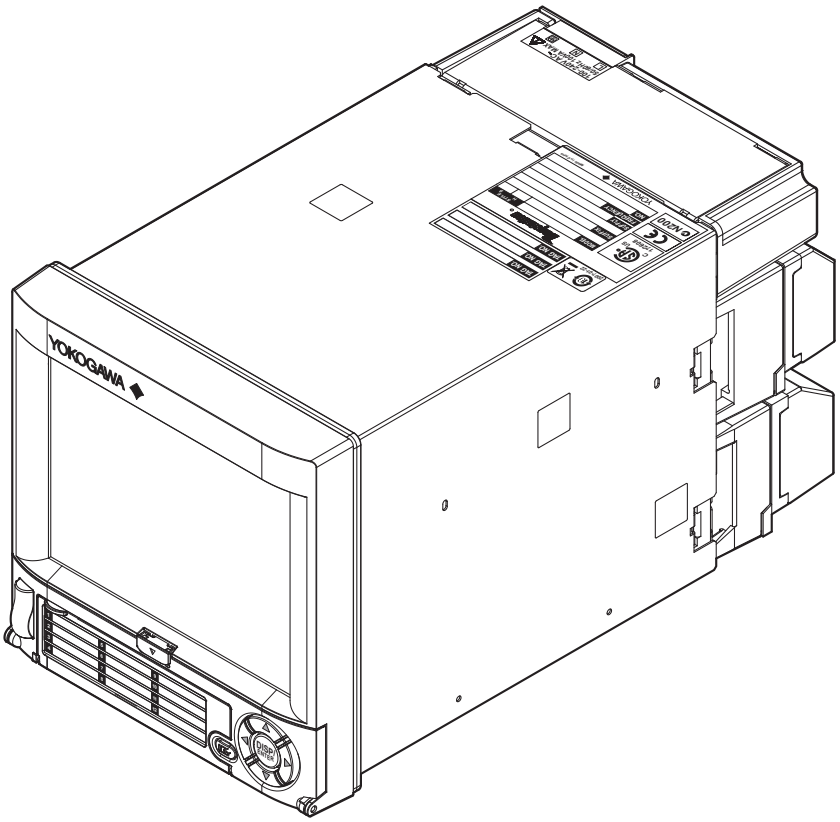
# 6.1 Customer Maintenance Parts List (DX1000)

## Customer Maintenance Parts List

**Model DX1002, DX1004, DX1006, DX1012**

**Daqstation DX1000**

DXAdvanced®




**Note:**
- **Parts marked with a ◎symbol are Customer Maintenance Parts (CMP).**
- **The contents of this CMPL are subject to change without prior notice as a result of continuing improvements to the instrument's performance and functions.**

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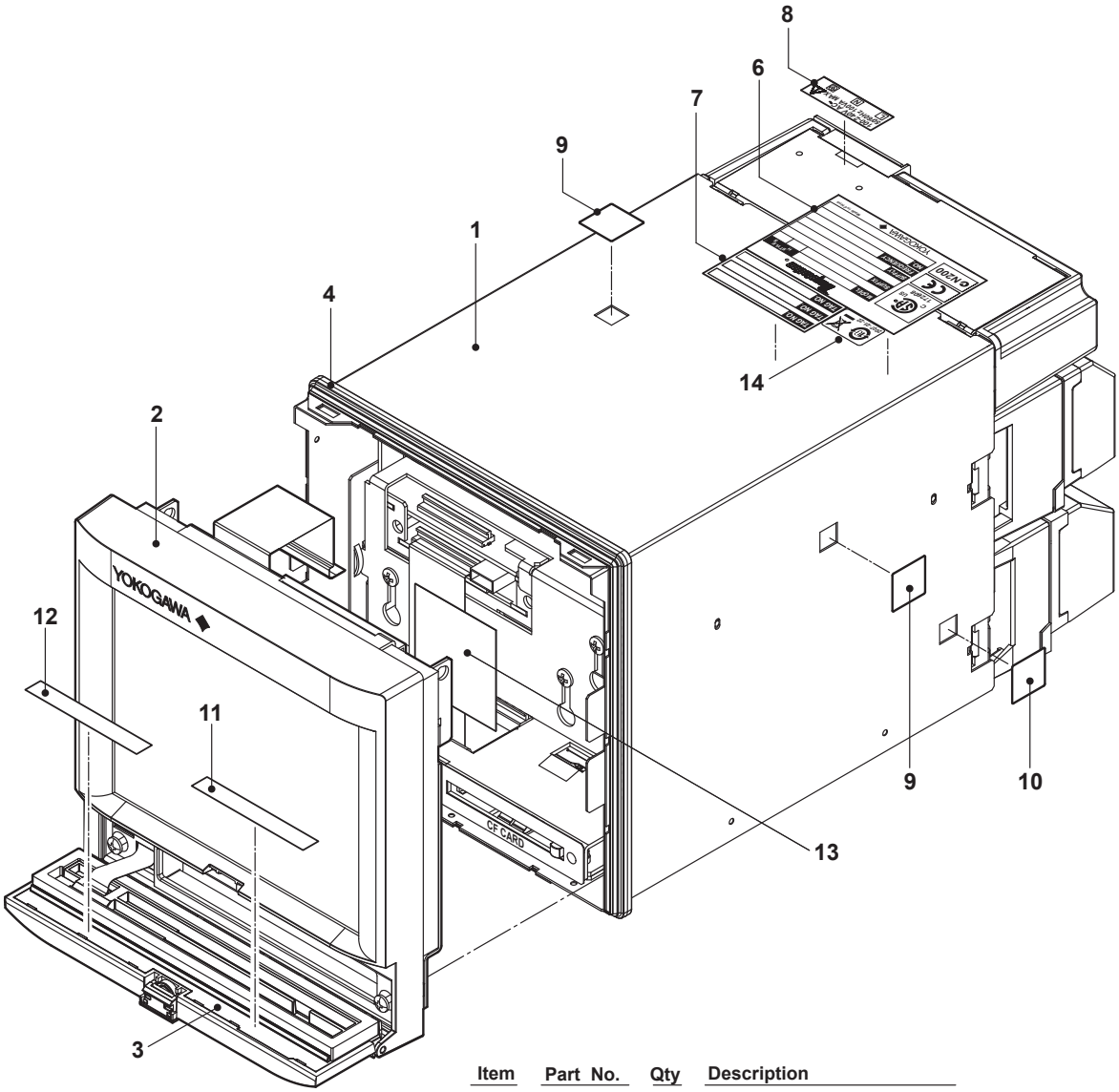
CMPL 04L41B01-01E

## 2 Complete Set

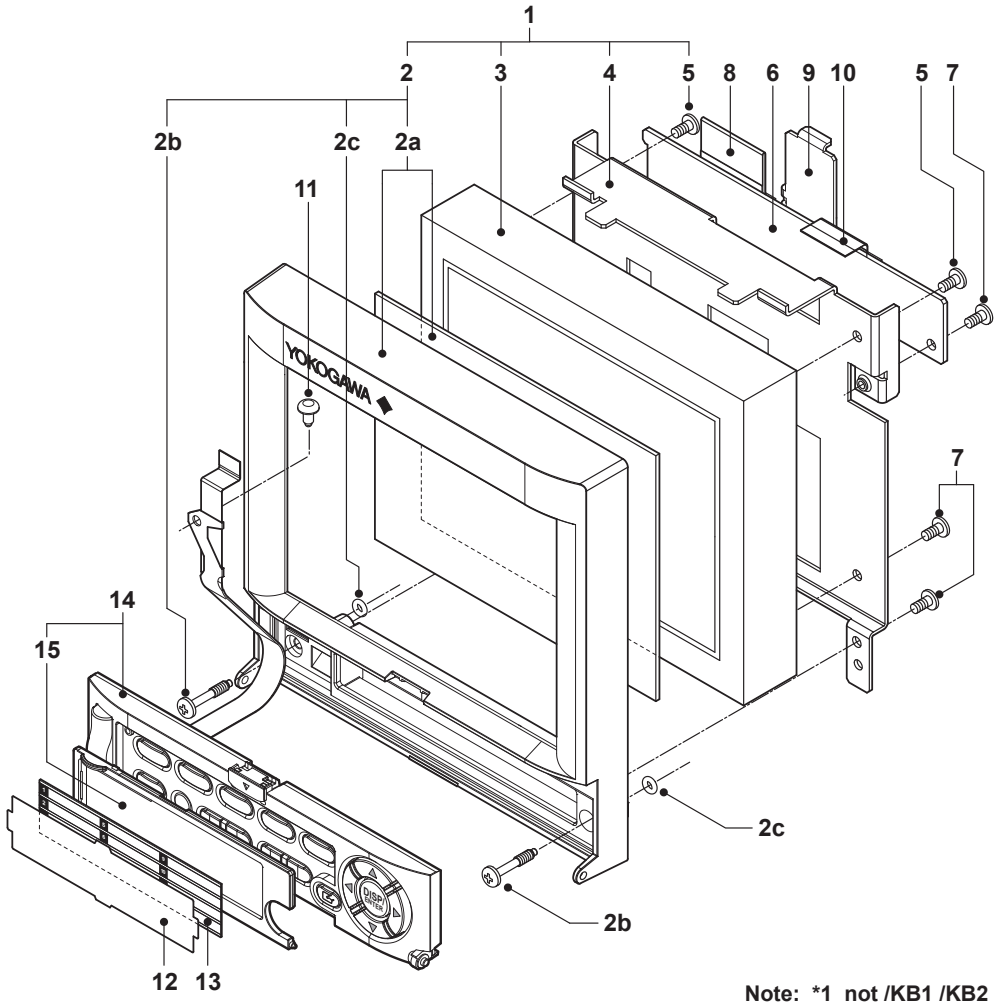



| Item | Part No. | Qty | Description |
|---|---|---|---|
| 1 | – | 1 | Case Assembly |
| 2 | – | 1 | Bezel Assembly } (see page 3) |
| 3 | – | 1 | Key Case Assembly } (see page 3) |
| 4 | B8705FY | 1 | Packing |
| 5 | – | – | – |
| 6 | – | 1 | Name Plate (not /H5□) *1 |
| 7 | B9900BP | – | Tag Plate (Customer Option) (not /H5□) *1 |
| 8 | B8705AD | 1 | Name Plate (not /P1 /H5□) *1 |
| | B8705AW | 1 | Name Plate ( /P1 not /H5□) *1 |
| 9 | B9968AT | 4 | Sheet |
| 10 | B9968AK | 2 | Sheet |
| 11 | B8705AC | 1 | Name Plate |
| 12 | B8705AH | 1 | Name Plate |
| 13 | B8705FA | 1 | FFC Protect |
| 14 | – | 1 | Name Plate (WEEE & China-RoHS) |

Note : *1 /H5□ : /H5 /H5D /H5F /H5H /H5J /H5M /H5R
◎ (CMP)

**CMPL 04L41B01-01E** Mar. 2007

## Bezel and Key Case Assembly 3




Note: *1 not /KB1 /KB2
*2 /KB1 or /KB2
◎ (CMP)

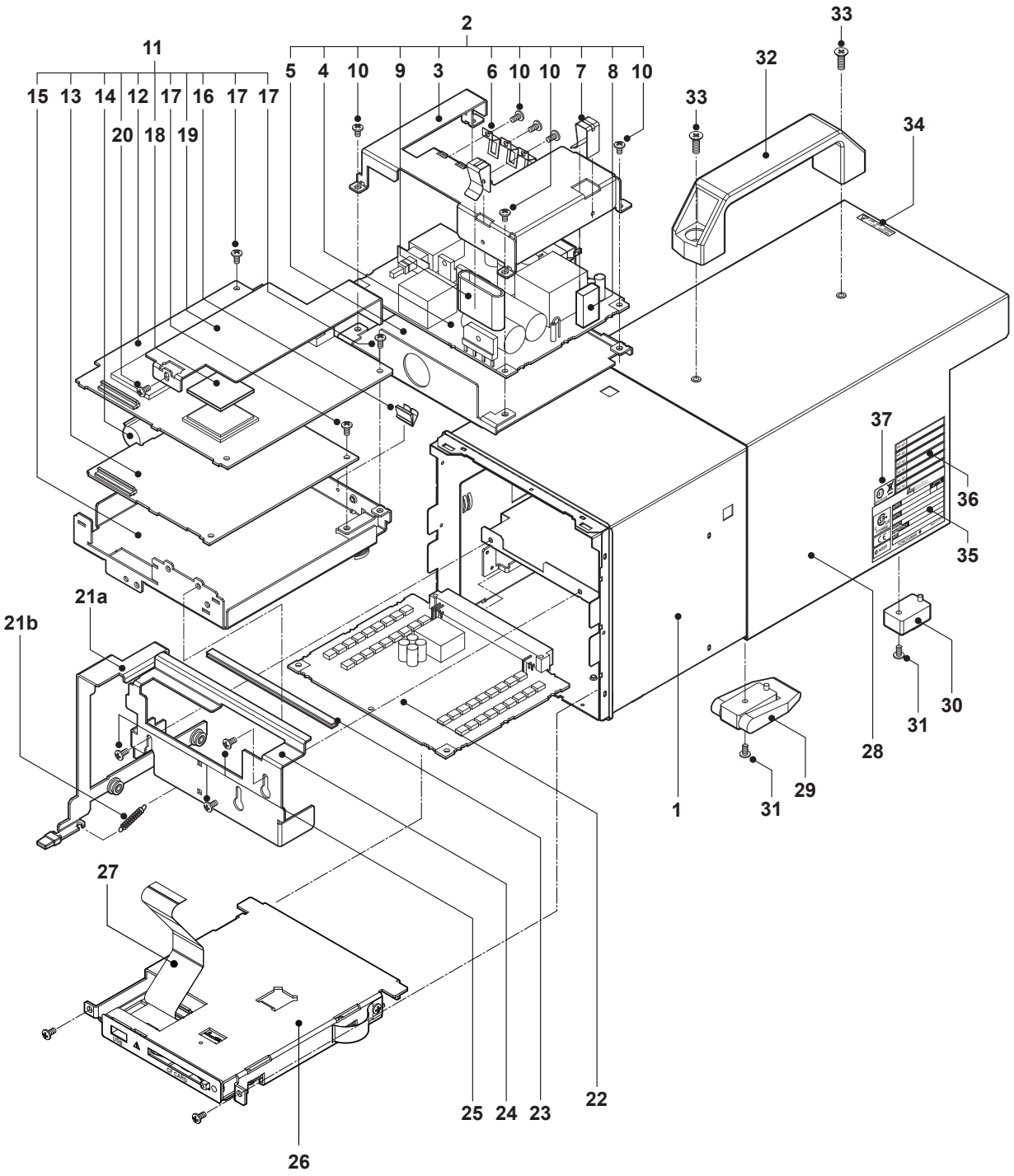
| Item | Part No. | Qty | Description |
|---|---|---|---|
| 1 | B8705BA | 1 | Bezel Assembly |
| 2 | B8705BD | 1 | Sub Bezel Assembly |
| 2a | B8705BB | 1 | Sub Bezel Assembly |
| 2b | B8705FK | 2 | Screw |
| 2c | B8705FL | 2 | O-Ring |
| 3 | A1078VA | 1 | LCD |
| | B8703KB | 1 | Back Light Unit |
| 4 | B8705BF | 1 | Display Bracket Assembly |
| 5 | B9988DM | 6 | Screw |
| 6 | B8705RD | 1 | CONN.W.O.OPT.PBA *1 (select) |
| | B8705SD | 1 | CONN.REM OPT.PBA *2 (select) |
| 7 | Y9305LB | 2 | Screw (M3x5) |
| 8 | B8706MJ | 1 | FFC (0.5MM-120MM) |
| 9 | B8705BJ | 1 | FPC Cover |
| 10 | B8705MF | 1 | FFC (0.5MM-50MM) |
| 11 | B9543SQ | 1 | NRP-345 |
| ◎ 12 | B8705AG | 1 | Sheet (TAG Plate Cover) |

| Item | Part No. | Qty | Description |
|---|---|---|---|
| ◎ 13 | B8705AE | 1 | TAG Plate (DX1002,1004) (select) |
| | B8705AF | 1 | TAG Plate (DX1006,1012) (select) |
| 14 | B8705BM | 1 | Key Case Assembly *1 (select) |
| | B8705BY | 1 | Key Case Assembly *2 (select) |
| ◎ 15 | B8705BR | 1 | Key Plate |

Feb. 2008

**CMPL 04L41B01-01E**

4 Main Assembly (1/2)




Note:
◎ (CMP)

CMPL 04L41B01-01E Nov. 2008

## Main Assembly (2/2) 5

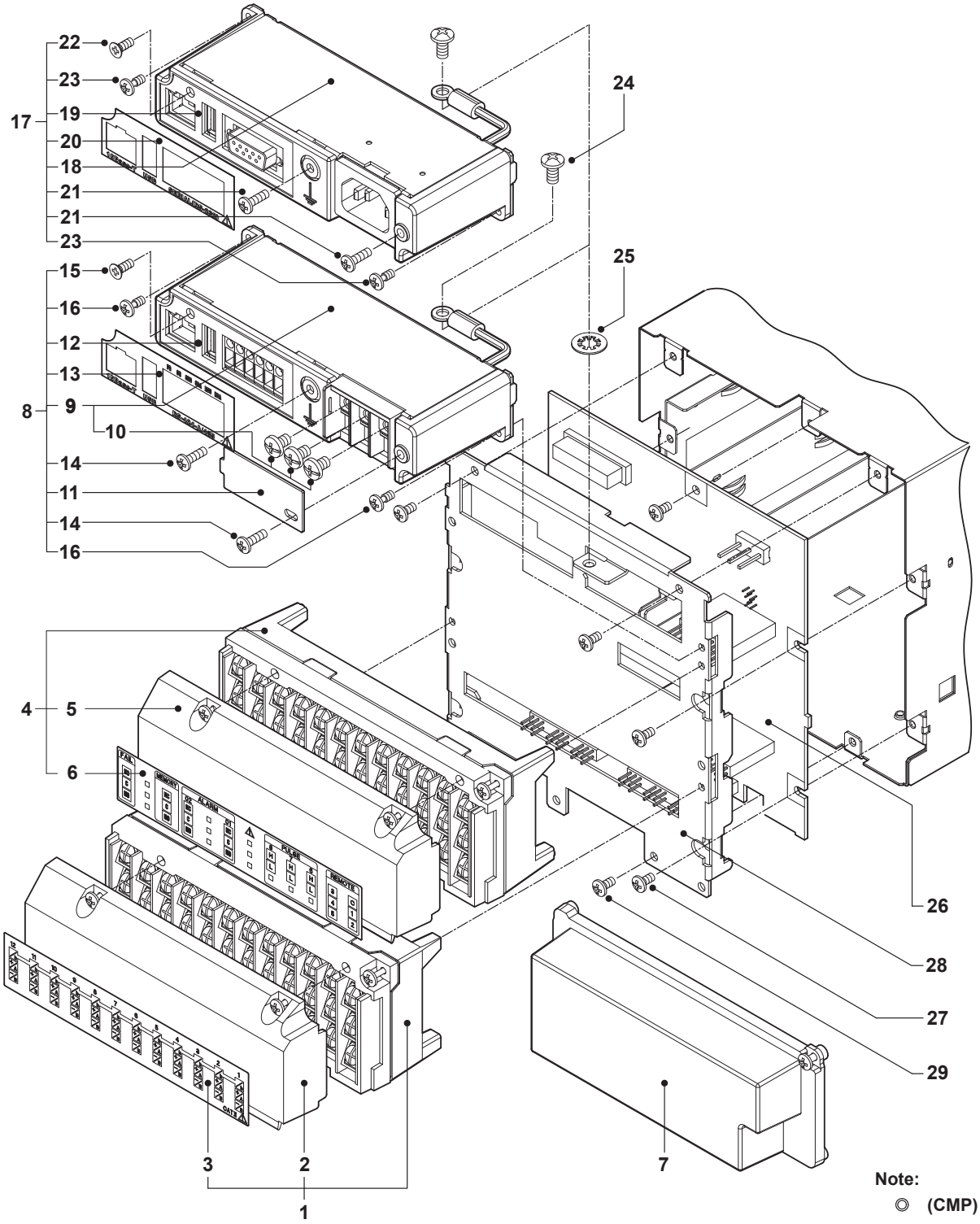
| Item | Part No. | Model | Qty DX1002 | DX1004 | DX1006 | DX1012 | Description | |
|---|---|---|---|---|---|---|---|---|
| 1 | B8705CA | | 1 | 1 | 1 | 1 | Case Assembly | |
| 2 | B8705DA | | 1 | 1 | 1 | 1 | Power Board Assembly (not /P1) | (select) |
| | B8705EA | | 1 | 1 | 1 | 1 | Power Assembly (24VAC/DC) ( /P1) | |
| 3 | B8706DC | | 1 | 1 | 1 | 1 | Power Cover (not /P1) | (select) |
| | B8706EC | | 1 | 1 | 1 | 1 | Power Cover ( /P1) | |
| 4 | B8705RF | | 1 | 1 | 1 | 1 | Power PBA (not /P1) | (select) |
| | B8705RQ | | 1 | 1 | 1 | 1 | Power PBA ( /P1) | |
| 5 | B8705DB | | 1 | 1 | 1 | 1 | Power Base | |
| 6 | A1252EH | | 3 | 3 | 3 | 3 | Heat Sink (not /P1) | (select) |
| | A1252EH | | 6 | 6 | 6 | 6 | Heat Sink ( /P1) | |
| 7 | B1007BL | | 2 | 2 | 2 | 2 | Clamp (not /P1) | (select) |
| | B1007BL | | 1 | 1 | 1 | 1 | Clamp ( /P1) | |
| 8 | S9763VK | | 1 | 1 | 1 | 1 | Thermal Sheet | |
| 9 | A1258EH | | 1 | 1 | 1 | 1 | ACS Heat Sink (not /P1) | |
| 10 | Y9305LB | | 7 | 7 | 7 | 7 | Screw (not /P1) | (select) |
| | Y9305LB | | 10 | 10 | 10 | 10 | Screw ( /P1) | |
| 11 | B8705DD | | 1 | 1 | 1 | 1 | Main Assembly (not /USB1) | (select) |
| | B8705ED | | 1 | 1 | 1 | 1 | Main Assembly ( /USB1) | |
| 12 | B8706RA | | 1 | 1 | 1 | 1 | Main PBA | |
| 13 | B8705NC | | 1 | 1 | 1 | 1 | Sub PBA EXP. Boot (not /USB1) | (select) |
| | B8705PC | | 1 | 1 | 1 | 1 | Sub PBA EXP. Boot ( /USB1) | |
| 14 | B9900BR | | 1 | 1 | 1 | 1 | Battery Assembly | |
| 15 | B8706DE | | 1 | 1 | 1 | 1 | CPU Bracket | |
| 16 | B9968GU | | 1 | 1 | 1 | 1 | Shield Finger | |
| 17 | Y9305LB | | 4 | 4 | 4 | 4 | Screw (M3x5) | |
| 18 | B8706FW | | 1 | 1 | 1 | 1 | GEL Sheet | |
| 19 | B8706DF | | 1 | 1 | 1 | 1 | Heat Sink | |
| 20 | Y9305LB | | 2 | 2 | 2 | 2 | Screw (M3x5) | |
| 21a | B8705CN | | 1 | 1 | 1 | 1 | SW Lever Assembly | |
| 21b | B9900FH | | 1 | 1 | 1 | 1 | Spring | |
| 22 | B8706RP | | – | – | 1 | – | AD-STD 6CH (not /N1 /N2) | |
| | B8706TP | | – | – | – | 1 | AD-STD 12CH (not /N1 /N2) | |
| | B8706RR | | 1 | – | – | – | AD-ISO 2CH | (select) |
| | B8706SR | | – | 1 | – | – | AD-ISO 4CH | |
| | B8706RS | | – | – | 1 | – | AD-ISO 6CH ( /N1 or /N2) | |
| | B8706TS | | – | – | – | 1 | AD-ISO 12CH ( /N1 or /N2) | |
| 23 | A9088KY | | 1 | 1 | 1 | 1 | Clamp | |
| 24 | B8705CK | | 1 | 1 | 1 | 1 | PCB Plate | |
| 25 | Y9305LB | | 3 | 3 | 3 | 3 | Screw (M3x5) | |
| 26 | B8705DE | | 1 | 1 | 1 | 1 | CF Assembly (128 MB, not /USB1) *1 | |
| | B8705EE | | 1 | 1 | 1 | 1 | CF Assembly (128 MB, /USB1) *1 | |
| | B8705DF | | 1 | 1 | 1 | 1 | CF Assembly (256 MB, not /USB1) *2 | (select) |
| | B8705EF | | 1 | 1 | 1 | 1 | CF Assembly (256 MB, /USB1) *2 | |
| | B8705DG | | 1 | 1 | 1 | 1 | CF Assembly (512 MB, not /USB1) *3 | |
| | B8705EG | | 1 | 1 | 1 | 1 | CF Assembly (512 MB, /USB1) *3 | |
| 27 | B8705ME | | 1 | 1 | 1 | 1 | FFC (0.5MM-90MM) | |
| 28 | B8705CW | | 1 | 1 | 1 | 1 | Cover Assembly | |
| 29 | B9961BR | | 2 | 2 | 2 | 2 | F. Foot | |
| 30 | B9961BS | | 2 | 2 | 2 | 2 | R. Foot | |
| 31 | Y9306LS | | 4 | 4 | 4 | 4 | Screw (M3x6) | |
| 32 | B9961BQ | | 1 | 1 | 1 | 1 | Handle | |
| 33 | Y9412ES | | 2 | 2 | 2 | 2 | Screw (M4x12) | ( /H5□) (select) *4 |
| | C1024FC | | – | – | – | – | Adhesive | |
| 34 | B8705AX | | 1 | 1 | 1 | 1 | Name Plate ( not /P1) | |
| | B8705AW | | 1 | 1 | 1 | 1 | Name Plate ( /P1) | |
| 35 | – | | 1 | 1 | 1 | 1 | Name Plate | |
| 36 | B9900BP | | – | – | – | – | Tag Plate (Customer Option) | |
| 37 | – | | 1 | 1 | 1 | 1 | Name Plate (WEEE & China-RoHS) | |

Note : *1 Standard Memory
*2 Large Memory
*3 Standard Memory (400 MB)
*4 /H5□ : /H5 /H5D /H5F /H5H /H5J /H5M /H5R
◎ (CMP)

Apr. 2010

**CMPL 04L41B01-01E**

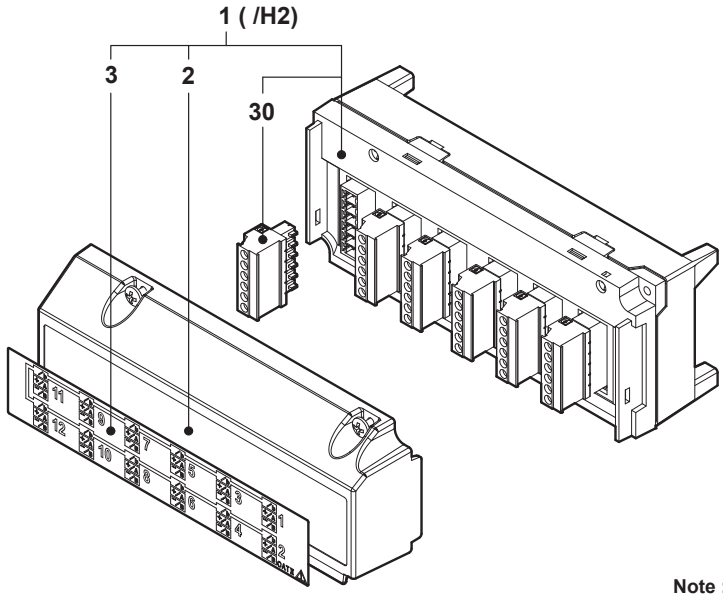
6 Terminal Assembly (1/3)




CMPL 04L41B01-01E Apr. 2006

## Terminal Assembly (2/3) 7

| Item | Part No. | Qty | Description |
|---|---|---|---|
| 1 | – | 1 | Input Terminal Assembly (select) *1 |
| 2 | B9968DF | 1 | Cover Assembly (not /H2) } (select) |
| | B8705FF | 1 | Cover Assembly ( /H2) } (select) |
| 3 | – | 1 | Name Plate (select) *2 |
| 30 | A1923JT | 1–6 | Connector ( /H2) (select) |
| 4 | – | 1 | Option Terminal Assembly (select) *3 |
| 5 | B9968DF | 1 | Cover Assembly |
| 6 | – | 1 | Name Plate (select) *4 |
| 7 | B9968DN | 1 | CONN Cover Assembly (select) *3 |
| 8 | – | 1 | S-Power Terminal (select) *5 |
| 9 | – | 1 | POW TERM SCR. (select) *6 |
| 10 | E9655FX | 3 | Screw (ETO Screw) |
| 11 | B8706FE | 1 | Plate |
| 12 | – | 1 | Plate (select) *7 |
| 13 | – | 1 | Plate (select) *8 |
| 14 | Y9310LB | 2 | Screw (M3x10) |
| 15 | Y9306EB | 1 | Screw (M3x6) |
| 16 | B9900SG | 2 | Screw |
| 17 | – | 1 | I-PWR Terminal (select) *9 |
| 18 | – | 1 | POW TERM INL. (select) *10 |
| 19 | – | 1 | Plate (select) *11 |
| 20 | – | 1 | Plate (select) *12 |
| 21 | Y9310LB | 2 | Screw (M3x10) |
| 22 | Y9306EB | 1 | Screw (M3x6) |
| 23 | B9900SG | 2 | Screw |
| 24 | Y9405LB | 1 | Screw (M4x5) |
| 25 | Y9401WL | 1 | Washer |
| 26 | B8705RC | 1 | Mother PBA |
| 27 | Y9305LB | 5 | Screw (M3x5) |
| 28 | B8705CH | 1 | Rear Panel |
| 29 | Y9305LB | 4 | Screw (M3x5) |




Note : *1 to 12 see next page.

◎ (CMP)

Jul. 2007

**CMPL 04L41B01-01E**

## 8 Terminal Assembly (3/3)

### Input Terminal Assembly

| MODEL | MS CODE (OPTION) AND | OR | NOT | *1 Item 1 | *2 Item 3 |
|---|---|---|---|---|---|
| DX1002 | | | /H2 | B9968LL | B9967FD |
| | /H2 | | | B8706JN | B9968JH |
| DX1004 | | | /H2 | B9968LJ | B9968FV |
| | /H2 | | | B8706JP | B9968JJ |
| DX1006 | | | /H2 /N1 /N2 | B9968LD | B9967FA |
| | | /N1 /N2 | /H2 | B9968LM | B9967FE |
| | /H2 | | /N1 /N2 | B8706HR | B9968JL |
| | /H2 | /N1 /N2 | | B8706JQ | B9968JM |
| DX1012 | | | /H2 /N1 /N2 | B9968LH | B9967FB |
| | | /N1 /N2 | /H2 | B9968LR | B9967FF |
| | /H2 | | /N1 /N2 | B8706HW | B9968JN |
| | /H2 | /N1 /N2 | | B8706JW | B9968JP |

### Option Terminal Assembly

| MS CODE (OPTION) AND | OR | NOT | *3 Item 4 | *4 Item 6 |
|---|---|---|---|---|
| /A1 | | /F1 /PM1 /R1 /TPS2 | B9968KA | B9968EW |
| /A2 | | /F1 /PM1 /R1 | B9968KC | B9968EY |
| /A3 | | /PM1 /R1 | B9968KE | B9968FA |
| /A1 /R1 | | /F1 /PM1 /TPS2 | B9968KB | B9968EX |
| /A2 /R1 | | /F1 /PM1 | B9968KD | B9968EZ |
| /A3 /R1 | | | B9968KJ | B9968FE |
| /R1 | | /A1 /A2 /A3 /F1 /PM1 /TPS2 /TPS4 | B9968KK | B9968FF |
| /A1 /F1 | | /PM1 /R1 | B9968KL | B9968FH |
| /A2 /F1 | | /PM1 /R1 | B9968KN | B9968FK |
| /F1 | | /A1 /A2 /A3 /PM1 /R1 | B9968KQ | B9968FM |
| /A1 /F1 /R1 | | | B9968KM | B9968FJ |
| /A2 /F1 /R1 | | | B9968KP | B9968FL |
| /F1 /R1 | | /A1 /A2 /A3 /PM1 | B9968KR | B9968FN |
| /A1 /PM1 | | /A2 /F1 | B8703FA | B8703AL |
| /A2 /PM1 | | /A1 /F1 | B8703FB | B8703AM |
| /A1 /F1 /PM1 | | | B8703FC | B8703AN |
| /PM1 | | /A1 /A2 /F1 | B8703FD | B8703AP |
| /F1 /PM1 | | /A1 /A2 | B8703FE | B8703AQ |
| /A1 /TPS2 | | /PM1 /R1 | B9968KT | B9967FM |
| /A1 /R1 /TPS2 | | /PM1 | B9968KU | B9967FL |
| /TPS4 | | /PM1 /R1 | B9968KW | B9968FP |
| /TPS2 | | /A1 /PM1 /R1 | B9968KX | B9967FK |
| /R1 /TPS2 | | /A1 /PM1 | B9968KY | B9967FJ |
| /R1 /TPS4 | | | B9968KV | B9967FN |
| | | /A1 /A2 /A3 /F1 /R1 /PM1 /TPS2 /TPS4 | B9968DN | |

### Power Terminal Assembly

S-PWR TERMINAL

| MS CODE (OPTION) AND | OR | NOT | *5 Item 8 | *6 Item 9 | *7 Item 12 | *8 Item 13 |
|---|---|---|---|---|---|---|
| | | /C2 /C3 /H5 /H5D /H5F /H5H /H5J /H5M /H5R /P1 /USB1 | B8706DN | B8706RL | B8706DW | B8706FF |
| /C2 | | /C3 /H5 /H5D /H5F /H5H /H5J /H5M /H5R /P1 /USB1 | B8706DP | B8706RM | B8706DW | B8706FH |
| /C3 | | /C2 /H5 /H5D /H5F /H5H /H5J /H5M /H5R /P1 /USB1 | B8706DQ | B8706SM | B8706DX | B8706FJ |
| /CP1 | | /C2 /C3 /H5 /H5D /H5F /H5H /H5J /H5M /H5R /P1 /USB1 | B8706HD | B8706RY | B8706DW | B8706FT |
| /USB1 | | /C2 /C3 /H5 /H5D /H5F /H5H /H5J /H5M /H5R /P1 | B8706EN | B8706SL | B8706DW | B8706FG |
| /C2 /USB1 | | /C3 /H5 /H5D /H5F /H5H /H5J /H5M /H5R /P1 | B8706EP | B8706RN | B8706DW | B8706FK |
| /C3 /USB1 | | /C2 /H5 /H5D /H5F /H5H /H5J /H5M /H5R /P1 | B8706EQ | B8706SN | B8706DX | B8706FL |
| /CP1/USB1 | | /C2 /C3/H5 /H5D /H5F /H5H /H5J /H5M /H5R /P1 | B8706JD | B8706SY | B8706DW | B8706FU |
| /P1 | /H5 | /C2 /C3 /USB1 | B8706HA | B8706PL | B8706DW | B8706FF |
| /C2 /P1 | /H5 | /C3 /USB1 | B8706HB | B8706PM | B8706DW | B8706FH |
| /C3 /P1 | /H5 | /C2 /USB1 | B8706HC | B8706QM | B8706DX | B8706FJ |
| /CP1/P1 | | /C2 /C3/H5 /H5D /H5F /H5H /H5J /H5M /H5R /USB1 | B8706HF | B8706PY | B8706DW | B8706FT |
| /P1 /USB1 | /H5 | /C2 /C3 | B8706JA | B8706QL | B8706DW | B8706FG |
| /C2 /P1 /USB1 | /H5 | /C3 | B8706JB | B8706PN | B8706DW | B8706FK |
| /C3 /P1 /USB1 | /H5 | /C2 | B8706JC | B8706QN | B8706DX | B8706FL |
| /CP1/P1/USB1 | | /C2 /C3/H5 /H5D /H5F /H5H /H5J /H5M /H5R | B8706JF | B8706QY | B8706DW | B8706FU |

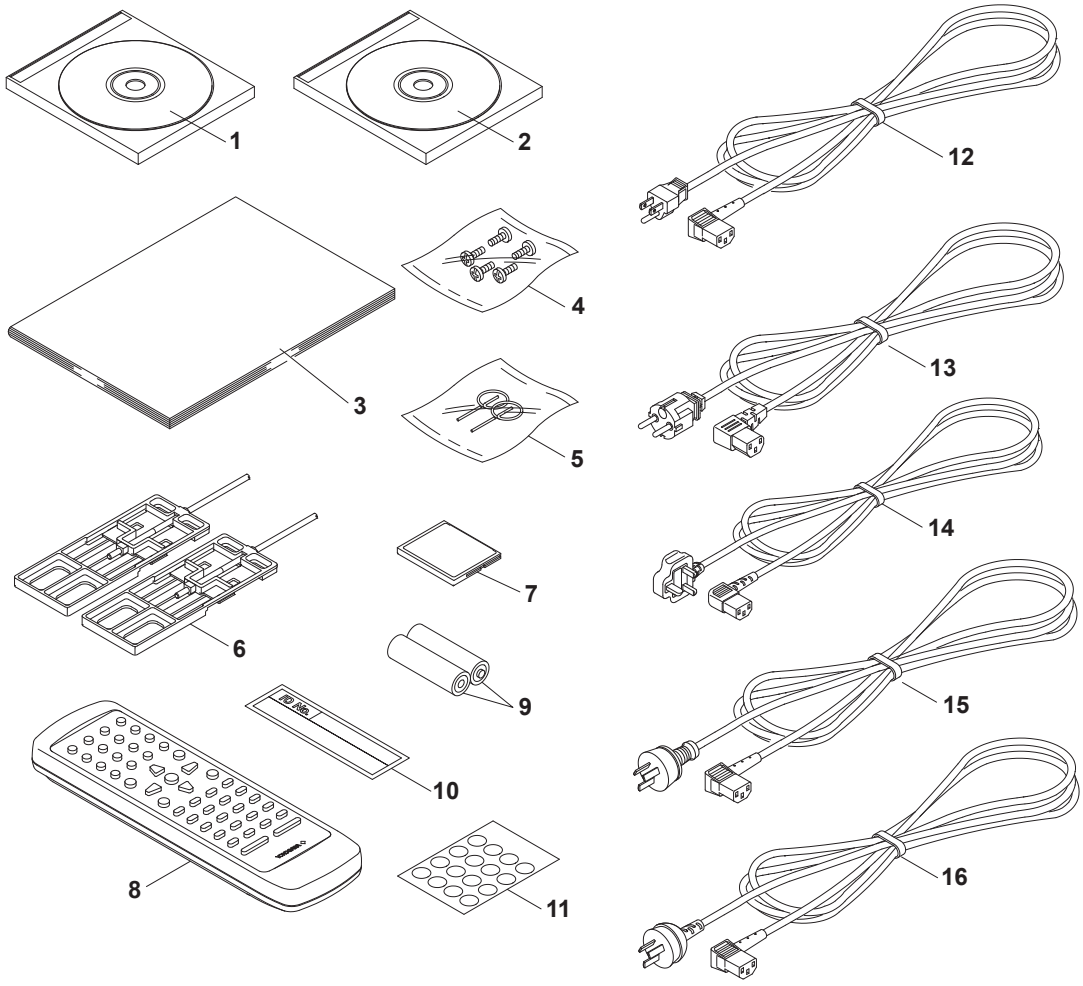
I-PWR TERMINAL

| MS CODE (OPTION) AND | OR | NOT | *9 Item 17 | *10 Item 18 | *11 Item 19 | *12 Item 20 |
|---|---|---|---|---|---|---|
| | /H5D /H5F /H5H /H5J /H5M /H5R | /C2 /C3 /P1 /USB1 | B8706DR | B8706TL | B8706DW | B8706FF |
| /C2 | /H5D /H5F /H5H /H5J /H5M /H5R | /C3 /P1 /USB1 | B8706DS | B8706TM | B8706DW | B8706FH |
| /C3 | /H5D /H5F /H5H /H5J /H5M /H5R | /C2 /P1 /USB1 | B8706DT | B8706UM | B8706DX | B8706FJ |
| /CP1 | /H5 /H5D /H5F /H5H /H5J /H5M /H5R | /C2 /C3 /P1 /USB1 | B8706HE | B8706TY | B8706DW | B8706FT |
| /USB1 | /H5D /H5F /H5H /H5J /H5M /H5R | /C2 /P1 /C3 | B8706ER | B8706UL | B8706DW | B8706FG |
| /C2 /USB1 | /H5D /H5F /H5H /H5J /H5M /H5R | /C3 /P1 | B8706ES | B8706TN | B8706DW | B8706FK |
| /C3 /USB1 | /H5D /H5F /H5H /H5J /H5M /H5R | /C2 /P1 | B8706ET | B8706UN | B8706DX | B8706FL |
| /CP1/USB1 | /H5 /H5D /H5F /H5H /H5J /H5M /H5R | /C2 /C3/P1 | B8706JE | B8706UY | B8706DW | B8706FU |

Note:

◎ (CMP)

## Standard Accessories 9




| Item | Part No. | Qty | Description |
|---|---|---|---|
| 1 | B9991AD | 1 | CD for DAQSTANDARD |
| 2 | B8706ZZ | 1 | CD-ROM for Manuals |
| 3 | – | – | Manuals |
| 4 | E9655FX | 5 | B.H.Screw (M4x6) |
| 5 | B8706FX | 2 | Door Lock Key |
| 6 | B9900BX | 2 | Bracket Assembly (not /H5 /H5□) |
| 7 | B8706NQ | 1 | CF Card 128 MB (The size and model may change.) |
| 8 | B8702EA | 1 | Remote Controller ( /KB1) |
| 9 | A1070EB | 2 | Battery ( /KB1) |
| 10 | B8702AE | 1 | Name Plate ( /KB1) |
| 11 | B8702AD | 1 | Name Plate ( /KB1) |
| 12 | A1006WD | 1 | Power Supply Code (UL /CSA standard) *1,*2 |
| 13 | A1009WD | 1 | Power Supply Code (VDE standard) *3 |
| 14 | A1054WD | 1 | Power Supply Code (BS standard) *4 |
| 15 | A1024WD | 1 | Power Supply Code (AS standard) *5 |
| 16 | A1064WD | 1 | Power Supply Code (GB standard) *6 |

(not /P1) (select)

Note:
*1 DX1□□□ -/H5M
*2 DX1□□□ -/H5D
*3 DX1□□□ -/H5F
*4 DX1□□□ -/H5J
*5 DX1□□□ -/H5R
*6 DX1□□□ -/H5H

◎ (CMP)

Apr. 2010

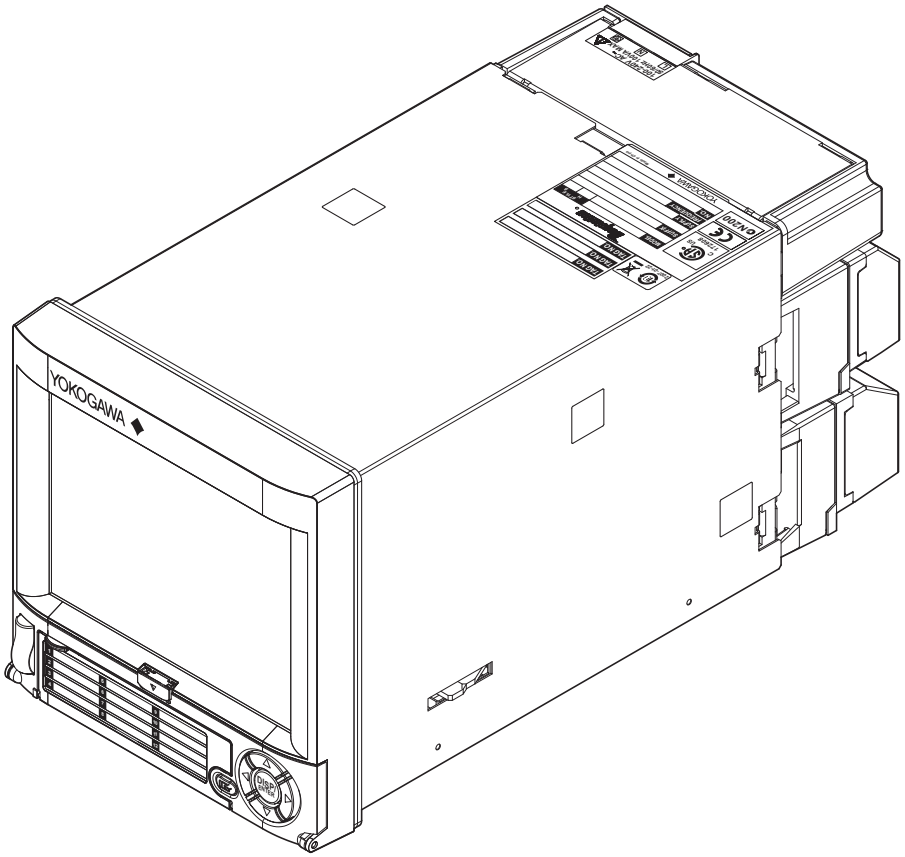
**CMPL 04L41B01-01E**

# 6.2 Customer Maintenance Parts List (DX1000N)

## Customer Maintenance Parts List

**Model DX1002N, DX1004N**
**DX1006N, DX1012N**
**Daqstation DX1000N**

DXAdvanced®




**Note:**
- **Parts marked with a ◎symbol are Customer Maintenance Parts (CMP).**
- **The contents of this CMPL are subject to change without prior notice as a result of continuing improvements to the instrument's performance and functions.**

YOKOGAWA
Yokogawa Electric Corporation
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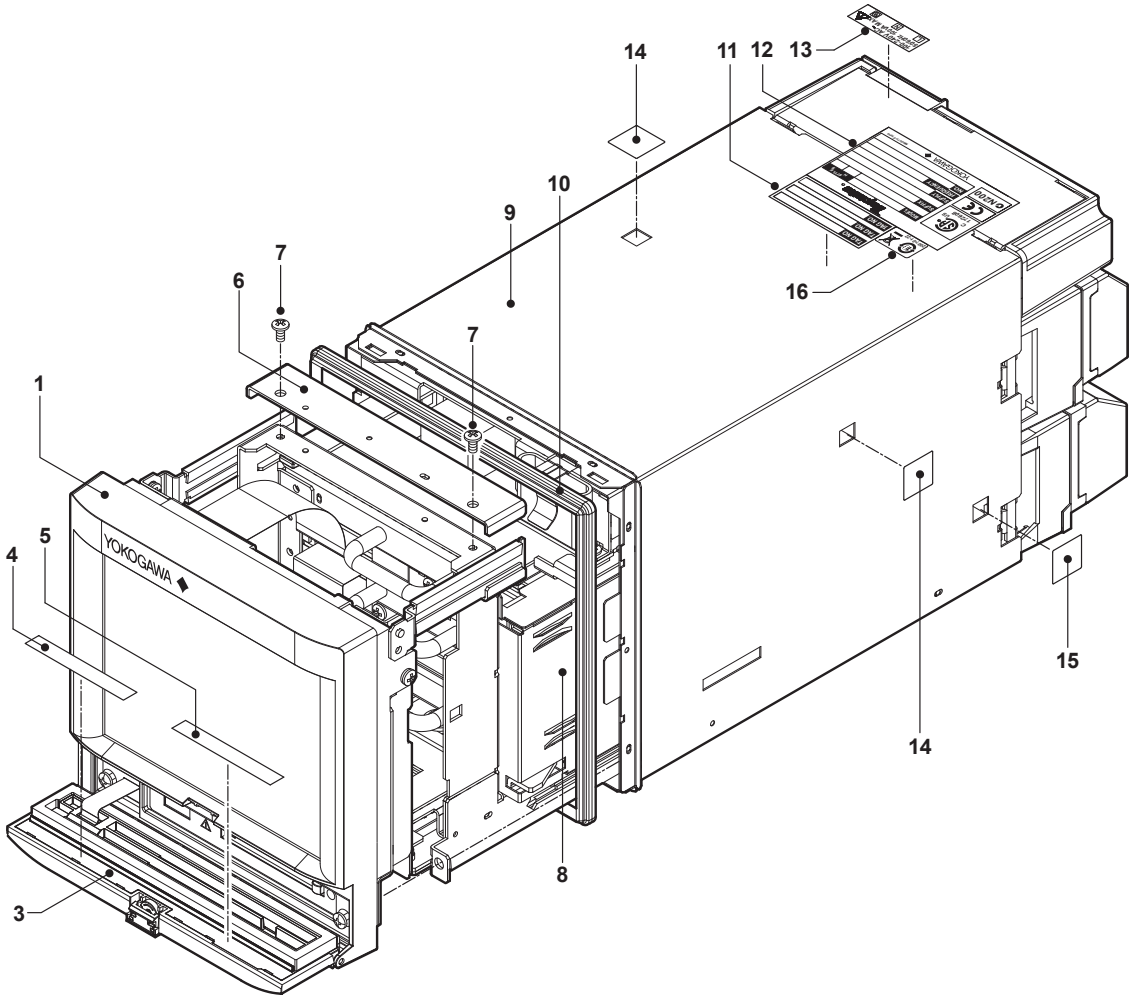
CMPL 04L43B01-01E

2 **Complete Set**

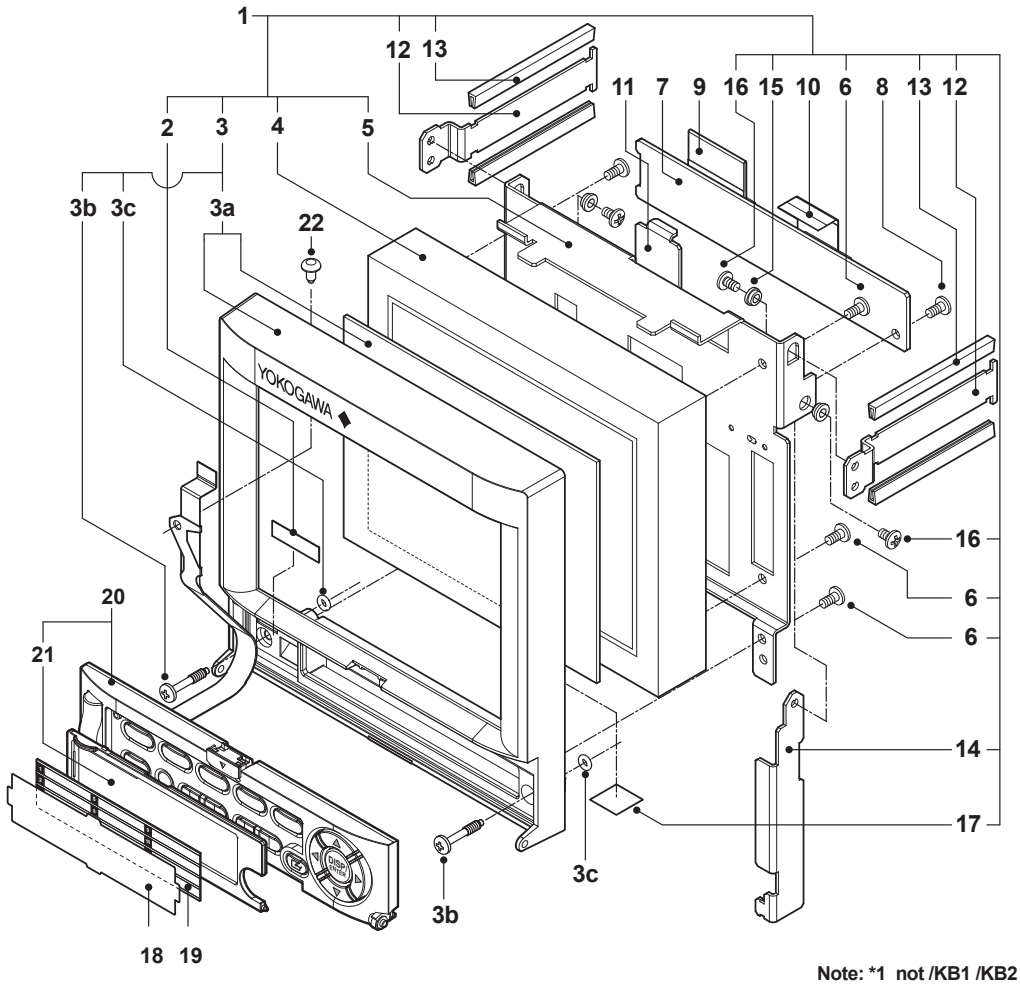



| Item | Part No. | Qty | Description | |
|---|---|---|---|---|
| 1 | – | 1 | Bezel Assembly | |
| 2 | – | – | – | (see page 3) |
| 3 | – | 1 | Key Case Assembly | |
| 4 | B8705AH | 1 | Name Plate | |
| 5 | B8705AC | 1 | Name Plate | |
| 6 | B8705JQ | 1 | Upper Guide | |
| 7 | Y9305LB | 2 | Screw (M3x5) | |
| 8 | – | 1 | Inside Assembly | (see page 4) |
| 9 | – | 1 | Case Assembly | |
| 10 | B8705FY | 1 | Packing | |
| 11 | B9900BP | – | Tag Plate (Customer Option) | |
| 12 | – | 1 | Name Plate | |
| 13 | B8705AD | 1 | Name Plate (not /P1) | |
| | B8705AW | 1 | Name Plate ( /P1) | |
| 14 | B9968AT | 4 | Sheet | |
| 15 | B9968AK | 2 | Sheet | |
| 16 | – | 1 | Name Plate (WEEE & China-RoHS) | |

Note:
◎ (CMP)

**CMPL 04L43B01-01E** Mar. 2007

## Bezel and Key Case Assembly 3




Note: *1 not /KB1 /KB2
*2 /KB1 /KB2
◎ (CMP)

| Item | Part No. | Qty | Description |
|---|---|---|---|
| 1 | B8705GA | 1 | Bezel Assembly |
| 2 | B8705FH | 1 | Plate |
| 3 | B8705BD | 1 | Sub Bezel Assembly |
| 3a | B8705BB | 1 | Sub Bezel Assembly |
| 3b | B8705FK | 2 | Screw |
| 3c | B8705FL | 2 | O-Ring |
| 4 | A1078VA | 1 | LCD |
| | B8703KB | 1 | Back Light Unit |
| 5 | B8705HC | 1 | DISP Bracket Assembly |
| 6 | B9988DM | 6 | Screw |
| 7 | B8705RD | 1 | CONN.W.O.OPT.PBA (not /KB1 /KB2) (select) |
| | B8705SD | 1 | CONN.REM.OPT.PBA ( /KB1 /KB2) (select) |
| 8 | Y9305LB | 2 | Screw (PBA and FPC Cover) (M3x5) |
| 9 | B8706MJ | 1 | FFC (0.5MM-120MM) |
| 10 | B8705MF | 1 | FFC (0.5MM-50MM) |
| 11 | B8705HL | 1 | FPC Cover |
| 12 | B8705HH | 2 | DISP ARM |
| 13 | B8705HM | 4 | ARM Guide |
| 14 | B8705HG | 1 | Stay |
| 15 | B8705HK | 3 | DISP Boss |

| Item | Part No. | Qty | Description |
|---|---|---|---|
| 16 | Y9305LB | 3 | Screw (M3x5) |
| 17 | B8705AR | 1 | Name Plate |
| ◎ 18 | B8705AG | 1 | Sheet (TAG Plate Cover) |
| ◎ 19 | B8705AE | 1 | TAG Plate (DX1002N, DX1004N) (select) |
| | B8705AF | 1 | TAG Plate (DX1006N, DX1012N) (select) |
| 20 | B8705BM | 1 | Key Case Assembly *1 (select) |
| | B8705BY | 1 | Key Case Assembly *2 (select) |
| 21 | B8705BR | 1 | Key Plate |
| 22 | B9543SQ | 1 | NRP-345 |

Feb. 2008

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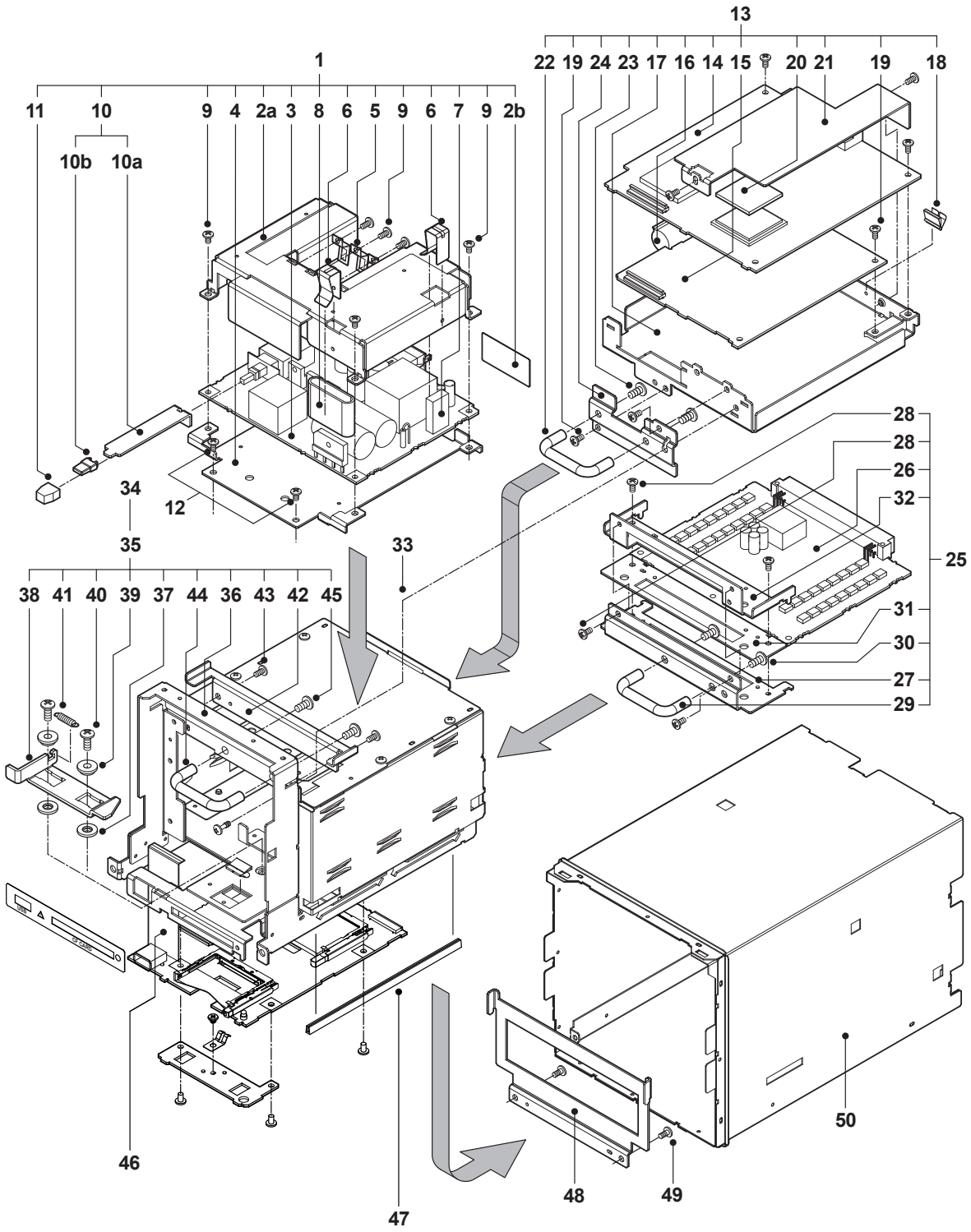
4 Case and Inside Assembly (1/3)




Note:
◎ (CMP)

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## Case and Inside Assembly (2/3) 5

| Item | Part No. | Model | Qty DX1002N | DX1004N | DX1006N | DX1012N | Description |
|---|---|---|---|---|---|---|---|
| 1 | B8705DH | | 1 | 1 | 1 | 1 | Power Assembly (not /P1) } (select) |
| | B8705EH | | 1 | 1 | 1 | 1 | Power Assembly (24VAC/DC) ( /P1) } |
| 2a | B8708GD | | 1 | 1 | 1 | 1 | Power Cover (not /P1) } (select) |
| | B8706EC | | 1 | 1 | 1 | 1 | Power Cover ( /P1) } |
| 2b | B8708GM | | 1 | 1 | 1 | 1 | Sheet (not /P1) (select) |
| 3 | B8705RF | | 1 | 1 | 1 | 1 | Power PBA (not /P1) } (select) |
| | B8705RQ | | 1 | 1 | 1 | 1 | Power PBA ( /P1) } |
| 4 | B8705DJ | | 1 | 1 | 1 | 1 | Power Base |
| 5 | A1252EH | | 3 | 3 | 3 | 3 | Heat Sink (not /P1) } (select) |
| | A1252EH | | 6 | 6 | 6 | 6 | Heat Sink ( /P1) } |
| 6 | B1007BL | | 2 | 2 | 2 | 2 | Clamp (not /P1) } (select) |
| | B1007BL | | 1 | 1 | 1 | 1 | Clamp ( /P1) } |
| 7 | S9763VK | | 1 | 1 | 1 | 1 | Thermal Sheet |
| 8 | A1258EH | | 1 | 1 | 1 | 1 | ACS Heat Sink (not /P1) |
| 9 | Y9305LB | | 7 | 7 | 7 | 7 | Screw (M3x5) (not /P1) } (select) |
| | Y9305LB | | 10 | 10 | 10 | 10 | Screw (M3x5) ( /P1) } |
| 10 | B8705GX | | 1 | 1 | 1 | 1 | SW Lever Assembly |
| 10a | B8705GY | | 1 | 1 | 1 | 1 | SW Lever |
| 10b | B9967BQ | | 1 | 1 | 1 | 1 | Knob |
| 11 | A9049ZG | | 1 | 1 | 1 | 1 | Knob |
| 12 | Y9305LB | | 2 | 2 | 2 | 2 | Screw (M3x5) |
| 13 | B8705DL | | 1 | 1 | 1 | 1 | Main Assembly (not /USB1) } (select) |
| | B8705EL | | 1 | 1 | 1 | 1 | Main Assembly ( /USB1) } |
| 14 | B8706RA | | 1 | 1 | 1 | 1 | Main PBA |
| 15 | B8705NC | | 1 | 1 | 1 | 1 | Sub PBA EXP. Boot (not /USB1) } (select) |
| | B8705PC | | 1 | 1 | 1 | 1 | Sub PBA EXP. Boot ( /USB1) } |
| 16 | B9900BR | | 1 | 1 | 1 | 1 | Battery Assembly |
| 17 | B8706DE | | 1 | 1 | 1 | 1 | CPU Bracket |
| 18 | B9968GU | | 1 | 1 | 1 | 1 | Shield Finger |
| 19 | Y9305LB | | 8 | 8 | 8 | 8 | Screw (M3x5) |
| 20 | B8706FW | | 1 | 1 | 1 | 1 | GEL Sheet |
| 21 | B8706DF | | 1 | 1 | 1 | 1 | Heat Sink |
| 22 | B8705FJ | | 1 | 1 | 1 | 1 | Handle |
| 23 | Y9406LB | | 2 | 2 | 2 | 2 | Screw (M4x6) |
| 24 | B8705HR | | 1 | 1 | 1 | 1 | Handle Bracket |
| 25 | B8705DY | | | | 1 | | AD Assembly 6CH (not /N1 /N2) } (select) |
| | B8705DZ | | | | | 1 | AD Assembly 12CH (not /N1 /N2) } |
| | B8705EW | | 1 | | | | AD Assembly 2CH } |
| | B8705EX | | | 1 | | | AD Assembly 4CH } |
| | B8705EY | | | | 1 | | AD Assembly 6CH ( /N1 /or /N2) } |
| | B8705EZ | | | | | 1 | AD Assembly 12CH ( /N1 /or /N2) } |
| 26 | B8706RP | | | | 1 | | AD-STD 6CH (not /N1 /N2) } (select) |
| | B8706TP | | | | | 1 | AD-STD 12CH (not /N1 /N2) } |
| | B8706RR | | 1 | | | | AD-ISO 2CH } |
| | B8706SR | | | 1 | | | AD-ISO 4CH } |
| | B8706RS | | | | 1 | | AD-ISO 6CH ( /N1 /or /N2) } |
| | B8706TS | | | | | 1 | AD-ISO 12CH ( /N1 /or /N2) } |
| 27 | B8705DV | | 1 | 1 | 1 | 1 | AD Bracket |
| 28 | Y9305LB | | 4 | 4 | 4 | 4 | Screw (M3x5) |
| 29 | B8705FJ | | 1 | 1 | 1 | 1 | Handle |
| 30 | Y9406LB | | 2 | 2 | 2 | 2 | Screw (M4x6) |
| 31 | B8705HU | | 1 | 1 | 1 | 1 | AD Plate |
| 32 | B8705HV | | 1 | 1 | 1 | 1 | AD Bracket 2 |

◎ (CMP)

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6

## Case and Inside Assembly (3/3)

| Item | Part No. | Model | Qty DX1002N | Qty DX1004N | Qty DX1006N | Qty DX1012N | Description | |
|---|---|---|---|---|---|---|---|---|
| 33 | B9900FW | | 1 | 1 | 1 | 1 | Screw | |
| 34 | B8705DP | | 1 | 1 | 1 | 1 | Inside Assembly (128 MB, not /USB1) *1 | (select) |
| | B8705DQ | | 1 | 1 | 1 | 1 | Inside Assembly (256 MB, not /USB1) *2 | |
| | B8705DR | | 1 | 1 | 1 | 1 | Inside Assembly (512 MB, not /USB1) *3 | |
| | B8705EP | | 1 | 1 | 1 | 1 | Inside Assembly (128 MB, /USB1) *1 | |
| | B8705EQ | | 1 | 1 | 1 | 1 | Inside Assembly (256 MB, /USB1) *2 | |
| | B8705ER | | 1 | 1 | 1 | 1 | Inside Assembly (512 MB, /USB1) *3 | |
| 35 | B8705GL | | 1 | 1 | 1 | 1 | Inside Case Assembly | |
| 36 | B8705JA | | 1 | 1 | 1 | 1 | Frame Assembly | |
| 37 | B8705JY | | 2 | 2 | 2 | 2 | Lever Boss 1 | |
| 38 | B8705JW | | 1 | 1 | 1 | 1 | Lever | |
| 39 | B8705JZ | | 2 | 2 | 2 | 2 | Lever Boss 2 | |
| 40 | Y9410LE | | 2 | 2 | 2 | 2 | Screw (M4x10) | |
| 41 | B9900RM | | 1 | 1 | 1 | 1 | Spring | |
| 42 | B8705JR | | 1 | 1 | 1 | 1 | Lower Guide | |
| 43 | Y9305LB | | 2 | 2 | 2 | 2 | Screw (M3x5) | |
| 44 | B8705FJ | | 1 | 1 | 1 | 1 | Handle | |
| 45 | Y9406LB | | 2 | 2 | 2 | 2 | Screw (M4x6) | |
| 46 | B8705ME | | 1 | 1 | 1 | 1 | FFC (0.5MM-90MM) | |
| 47 | B8705GQ | | 2 | 2 | 2 | 2 | Frame Guide | |
| 48 | B8705JT | | 1 | 1 | 1 | 1 | Back Cover | |
| 49 | Y9305LB | | 2 | 2 | 2 | 2 | Screw (M3x5) | |
| 50 | B8705GH | | 1 | 1 | 1 | 1 | Case Assembly | |

Note: *1 Standard Memory
*2 Large Memory
*3 Standard Memory (400 MB)
◎ (CMP)

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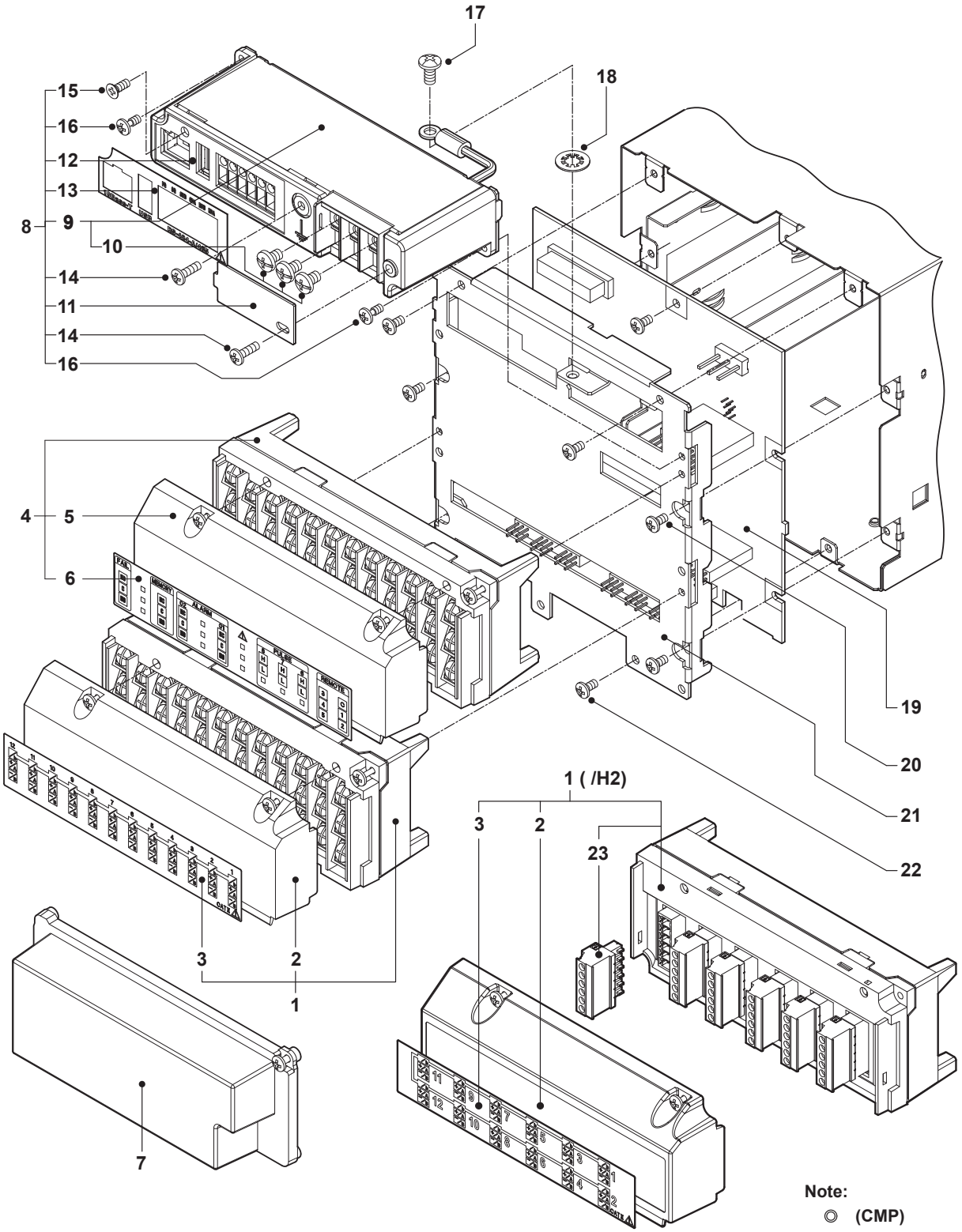
## Terminal Assembly (1/3) 7




Jul. 2007

**CMPL 04L43B01-01E**

8 **Terminal Assembly (2/3)**

| Item | Part No. | Qty | Description |
|---|---|---|---|
| 1 | – | 1 | Input Terminal Assembly (select) *1 |
| 2 | B9968DF | 1 | Cover Assembly (not /H2) } (select) |
| | B8705FF | 1 | Cover Assembly ( /H2) } (select) |
| 3 | – | 1 | Name Plate (select) *2 |
| 23 | A1923JT | 1–6 | Connector ( /H2) (select) |
| 4 | – | 1 | Option Terminal Assembly (select) *3 |
| 5 | B9968DF | 1 | Cover Assembly |
| 6 | – | 1 | Name Plate (select) *4 |
| 7 | B9968DN | 1 | CONN Cover Assembly (select) *3 |
| 8 | – | 1 | S-Power Terminal (select) *5 |
| 9 | – | 1 | POW TERM SCR. (select) *6 |
| 10 | E9655FX | 3 | Screw (ETO Screw) |
| 11 | B8706FE | 1 | Plate |
| 12 | – | 1 | Plate (select) *7 |
| 13 | – | 1 | Plate (select) *8 |
| 14 | Y9310LB | 2 | Screw (M3x10) |
| 15 | Y9306EB | 1 | Screw (M3x6) |
| 16 | B9900SG | 2 | Screw |
| 17 | Y9405LB | 1 | Screw (M4x5) |
| 18 | Y9401WL | 1 | Washer |
| 19 | B8705RC | 1 | Mother PBA |
| 20 | Y9305LB | 5 | Screw (M3x5) |
| 21 | B8705CH | 1 | Rear Panel |
| 22 | Y9305LB | 4 | Screw (M3x5) |

Note : *1 to 8 see next page.
◎ (CMP)

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## Terminal Assembly (3/3) 9

### Input Terminal Assembly

| MODEL | MS CODE (OPTION) AND | OR | NOT | *1 Item 1 | *2 Item 3 |
|---|---|---|---|---|---|
| DX1002N | | | /H2 | B9968LL | B9967FD |
| | /H2 | | | B8706JN | B9968JH |
| DX1004N | | | /H2 | B9968LJ | B9968FV |
| | /H2 | | | B8706JP | B9968JJ |
| DX1006N | | | /H2 /N1 /N2 | B9968LD | B9967FA |
| | | /N1 /N2 | /H2 | B9968LM | B9967FE |
| | /H2 | | /N1 /N2 | B8706HR | B9968JL |
| | /H2 | /N1 /N2 | | B8706JQ | B9968JM |
| DX1012N | | | /H2 /N1 /N2 | B9968LH | B9967FB |
| | | /N1 /N2 | /H2 | B9968LR | B9967FF |
| | /H2 | | /N1 /N2 | B8706HW | B9968JN |
| | /H2 | /N1 /N2 | | B8706JW | B9968JP |

### Option Terminal Assembly

| MS CODE (OPTION) AND | OR | NOT | *3 Item 4 | *4 Item 6 |
|---|---|---|---|---|
| /A1 | | /F1 /PM1 /R1 /TPS2 | B9968KA | B9968EW |
| /A2 | | /F1 /PM1 /R1 | B9968KC | B9968EY |
| /A3 | | /PM1 /R1 | B9968KE | B9968FA |
| /A1 /R1 | | /F1 /PM1 /TPS2 | B9968KB | B9968EX |
| /A2 /R1 | | /F1 /PM1 | B9968KD | B9968EZ |
| /A3 /R1 | | | B9968KJ | B9968FE |
| /R1 | | /A1 /A2 /A3 /F1 /PM1 /TPS2 /TPS4 | B9968KK | B9968FF |
| /A1 /F1 | | /PM1 /R1 | B9968KL | B9968FH |
| /A2 /F1 | | /PM1 /R1 | B9968KN | B9968FK |
| /F1 | | /A1 /A2 /A3 /PM1 /R1 | B9968KQ | B9968FM |
| /A1 /F1 /R1 | | | B9968KM | B9968FJ |
| /A2 /F1 /R1 | | | B9968KP | B9968FL |
| /F1 /R1 | | /A1 /A2 /A3 /PM1 | B9968KR | B9968FN |
| /A1 /PM1 | | /A2 /F1 | B8703FA | B8703AL |
| /A2 /PM1 | | /A1 /F1 | B8703FB | B8703AM |
| /A1 /F1 /PM1 | | | B8703FC | B8703AN |
| /PM1 | | /A1 /A2 /F1 | B8703FD | B8703AP |
| /F1 /PM1 | | /A1 /A2 | B8703FE | B8703AQ |
| /A1 /TPS2 | | /PM1 /R1 | B9968KT | B9967FM |
| /A1 /R1 /TPS2 | | /PM1 | B9968KU | B9967FL |
| /TPS4 | | /PM1 /R1 | B9968KW | B9968FP |
| /TPS2 | | /A1 /PM1 /R1 | B9968KX | B9967FK |
| /R1 /TPS2 | | /A1 /PM1 | B9968KY | B9967FJ |
| /R1 /TPS4 | | | B9968KV | B9967FN |
| | | /A1 /A2/ A3 /F1 /R1 /PM1 /TPS2 /TPS4 | B9968DN | |

### Power Terminal Assembly

| MS CODE (OPTION) AND | OR | NOT | *5 Item 8 | *6 Item 9 | *7 Item 12 | *8 Item 13 |
|---|---|---|---|---|---|---|
| | | /C2 /C3 /P1 /USB1 | B8706DN | B8706RL | B8706DW | B8706FF |
| /C2 | | /C3 /P1 /USB1 | B8706DP | B8706RM | B8706DW | B8706FH |
| /C3 | | /C2 /P1 /USB1 | B8706DQ | B8706SM | B8706DX | B8706FJ |
| /CP1 | | /C2/C3 /P1 /USB1 | B8706HD | B8706RY | B8706DW | B8706FT |
| /USB1 | | /C2 /C3 /P1 | B8706EN | B8706SL | B8706DW | B8706FG |
| /C2 /USB1 | | /C3 /P1 | B8706EP | B8706RN | B8706DW | B8706FK |
| /C3 /USB1 | | /C2 /P1 | B8706EQ | B8706SN | B8706DX | B8706FL |
| /CP1 /USB1 | | /C2 /C3 /P1 | B8706JD | B8706SY | B8706DW | B8706FU |
| /P1 | | /C2 /C3 /USB1 | B8706HA | B8706PL | B8706DW | B8706FF |
| /C2 /P1 | | /C3 /USB1 | B8706HB | B8706PM | B8706DW | B8706FH |
| /C3 /P1 | | /C2 /USB1 | B8706HC | B8706QM | B8706DX | B8706FJ |
| /CP1/ P1 | | /C2 /C3 /USB1 | B8706HF | B8706PY | B8706DW | B8706FT |
| /P1 /USB1 | | /C2 /C3 | B8706JA | B8706QL | B8706DW | B8706FG |
| /C2 /P1 /USB1 | | /C3 | B8706JB | B8706PN | B8706DW | B8706FK |
| /C3 /P1 /USB1 | | /C2 | B8706JC | B8706QN | B8706DX | B8706FL |
| /CP1 /P1 /USB1 | | /C2 /C3 | B8706JF | B8706QY | B8706DW | B8706FU |

◎ (CMP)

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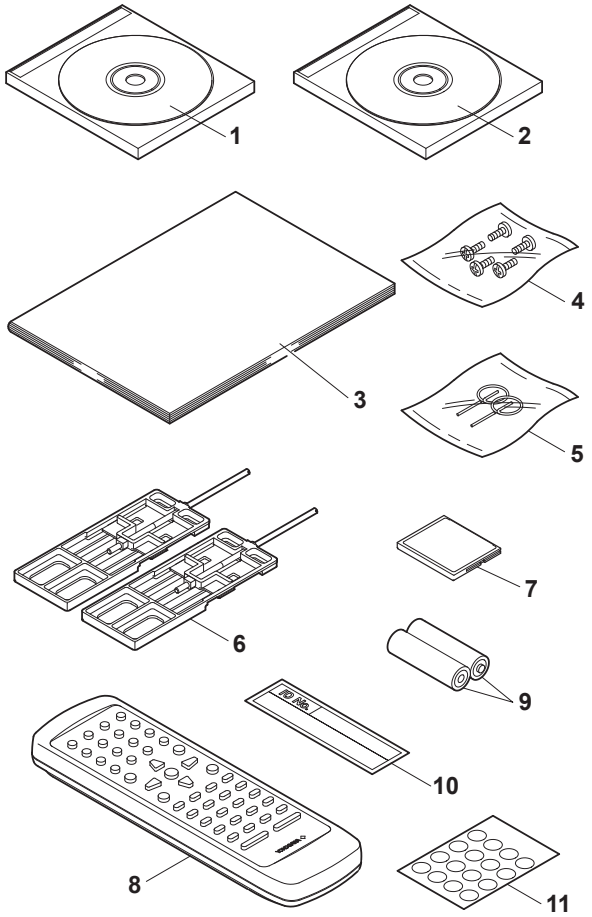
10 **Standard Accessories**




| Item | Part No. | Qty | Description |
|---|---|---|---|
| 1 | B9991AD | 1 | CD for DAQSTANDARD |
| 2 | B8706ZZ | 1 | CD-ROM for Manuals |
| 3 | – | – | Manuals |
| 4 | E9655FX | 5 | B.H.Screw (M4x6) |
| 5 | B8706FX | 2 | Door Lock Key |
| 6 | B9900BX | 2 | Bracket Assembly |
| 7 | B8706NQ | 1 | CF Card 128 MB (The size and model may change.) |
| 8 | A8702EA | 1 | Remote Controller ( /KB1) |
| 9 | A1070EB | 2 | Battery ( /KB1) |
| 10 | B8702AE | 1 | Name Plate ( /KB1) |
| 11 | B8702AD | 1 | Name Plate ( /KB1) |

◎ (CMP)

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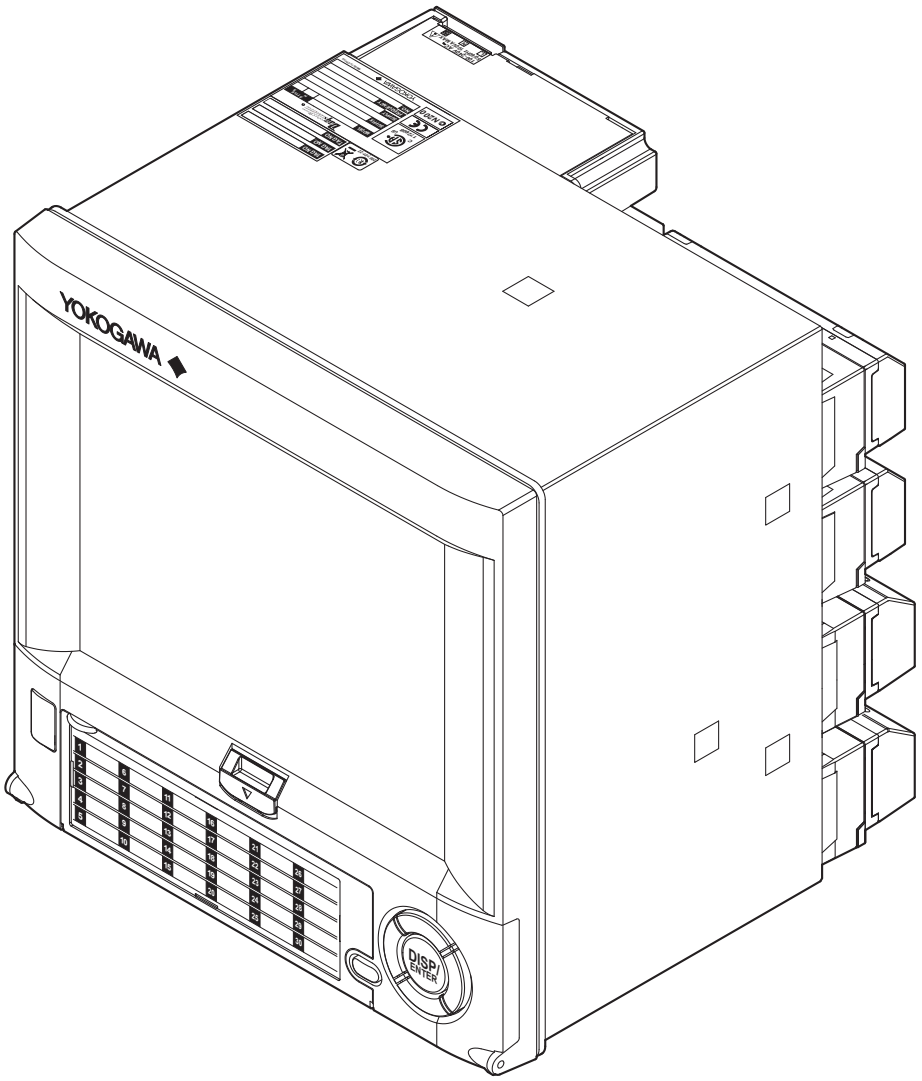
# 6.3 Customer Maintenance Parts List (DX2000)

## Customer Maintenance Parts List

**Model DX2004,DX2008,DX2010,DX2020**
**DX2030,DX2040,DX2048**
**Daqstation DX2000**

DXAdvanced®




**Note:**
- **Parts marked with a ◎symbol are Customer Maintenance Parts (CMP).**
- **The contents of this CMPL are subject to change without prior notice as a result of continuing improvements to the instrument's performance and functions.**

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Yokogawa Electric Corporation
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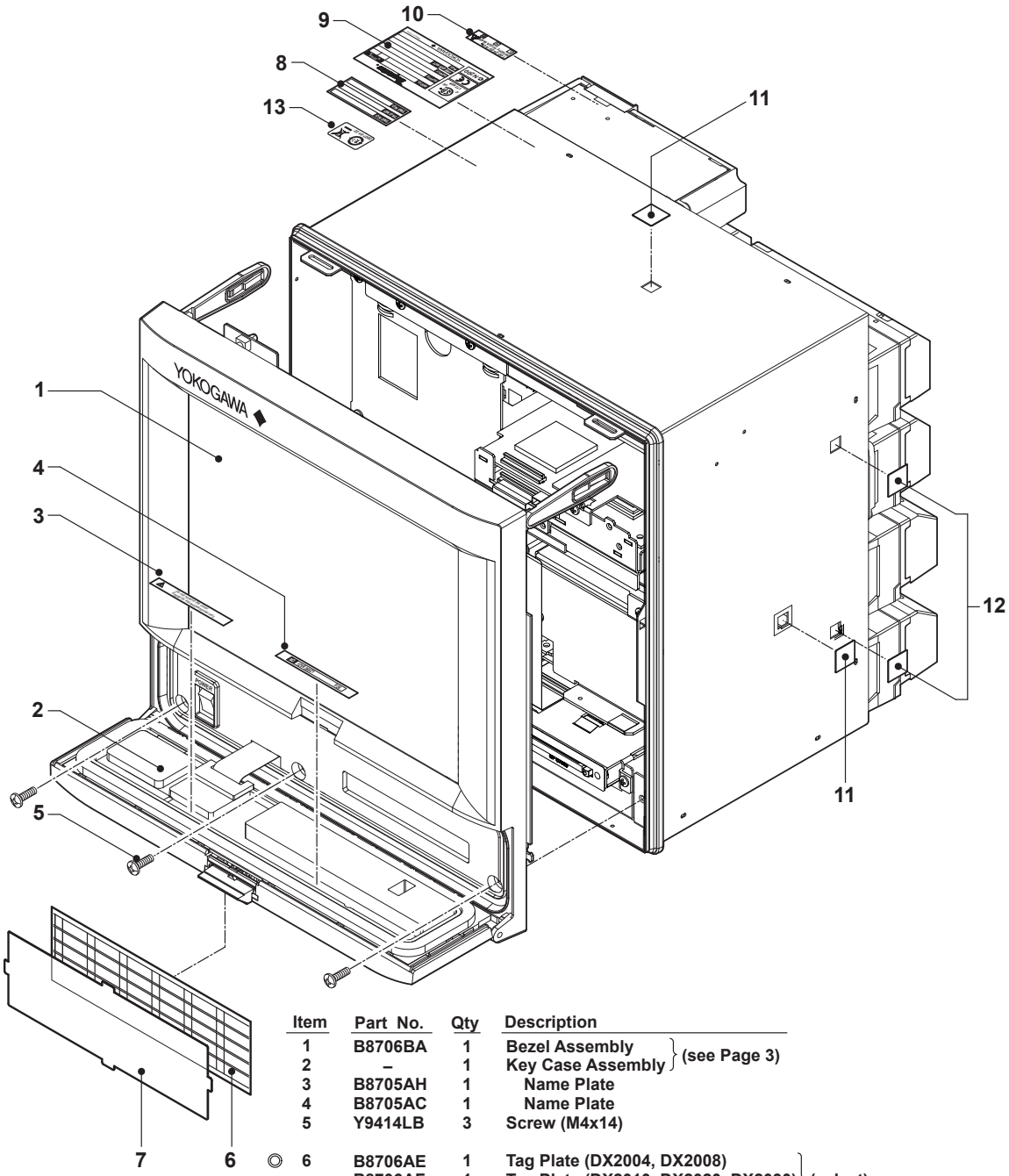
CMPL 04L42B01-01E

2 **Complete Set**




| Item | Part No. | Qty | Description |
|---|---|---|---|
| 1 | B8706BA | 1 | Bezel Assembly } (see Page 3) |
| 2 | – | 1 | Key Case Assembly } (see Page 3) |
| 3 | B8705AH | 1 | Name Plate |
| 4 | B8705AC | 1 | Name Plate |
| 5 | Y9414LB | 3 | Screw (M4x14) |
| ◎ 6 | B8706AE | 1 | Tag Plate (DX2004, DX2008) } (select) |
| | B8706AF | 1 | Tag Plate (DX2010, DX2020, DX2030) } (select) |
| | B8706AG | 1 | Tag Plate (DX2040, DX2048) } (select) |
| ◎ 7 | B8706AH | 1 | Sheet |
| 8 | B9900BP | – | Tag Plate (Customer Option) (not /H5□) *1 |
| 9 | – | 1 | Name Plate (not /H5□) *1 |
| 10 | B8706AD | 1 | Name Plate (not /P1 /H5□) *1 |
| | B8706GW | 1 | Name Plate ( /P1 not /H5□) *1 |
| 11 | B9968AT | 4 | Sheet |
| 12 | B9968AK | 4 | Sheet |
| 13 | – | – | Name Plate (WEEE & China-RoHS) |

Note: *1 /H5□ : /H5 /H5D /H5F /H5H /H5J /H5M /H5R
◎ (CMP)

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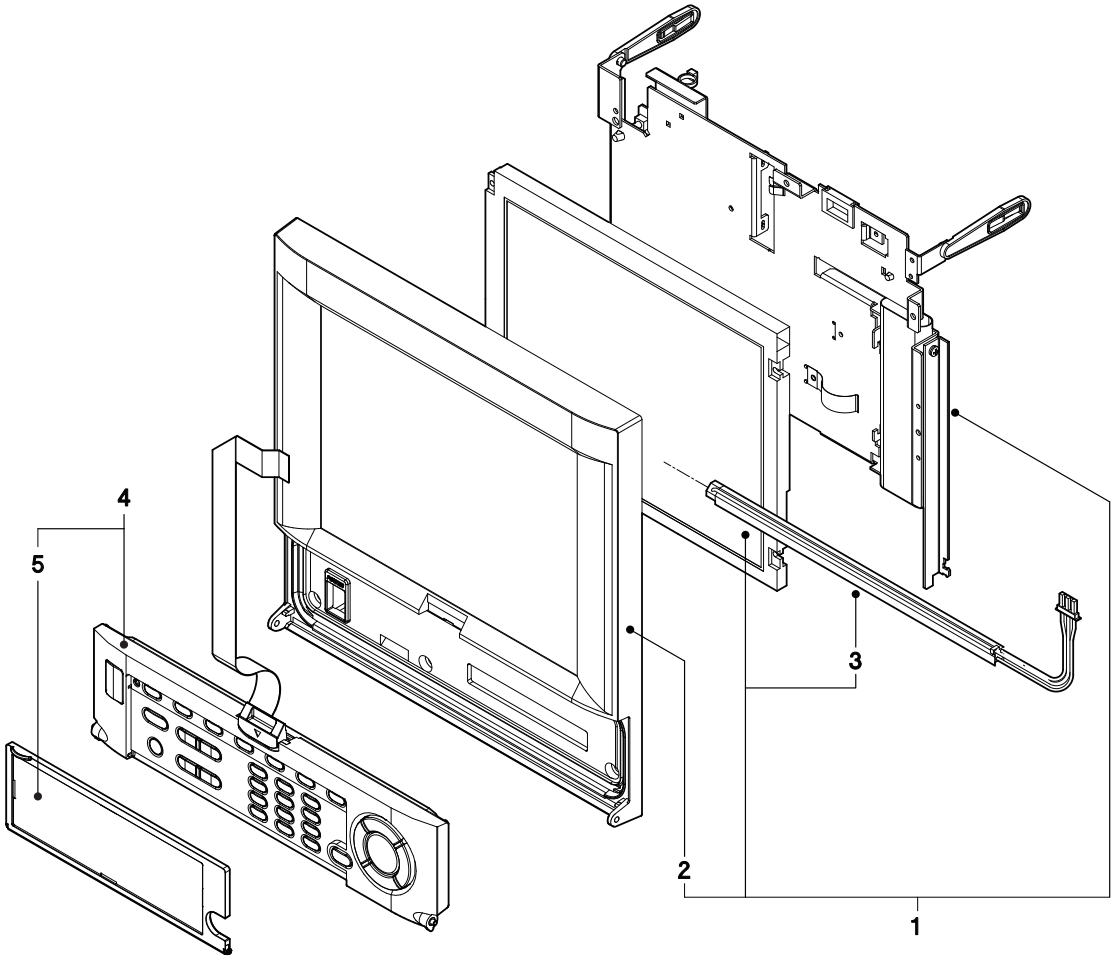
## Bezel and Key Case Assembly 3




| Item | Part No. | Qty | Description |
|---|---|---|---|
| 1 | B8706BA | 1 | Bezel Assembly |
| 2 | B8706BB | 1 | Sub Bezel Assembly |
| 3 | B9968PA | 1 | Back Light Unit (NEC) } (select) |
| | A1048VZ | 1 | Back Light Unit (KYOCERA) } (select) |
| 4 | B8706BM | 1 | Key Case Assembly (for English) } (select) |
| | B8706BY | 1 | Key Case Assembly (for Japanese) } (select) |
| 5 | B8706BR | 1 | Key Plate |

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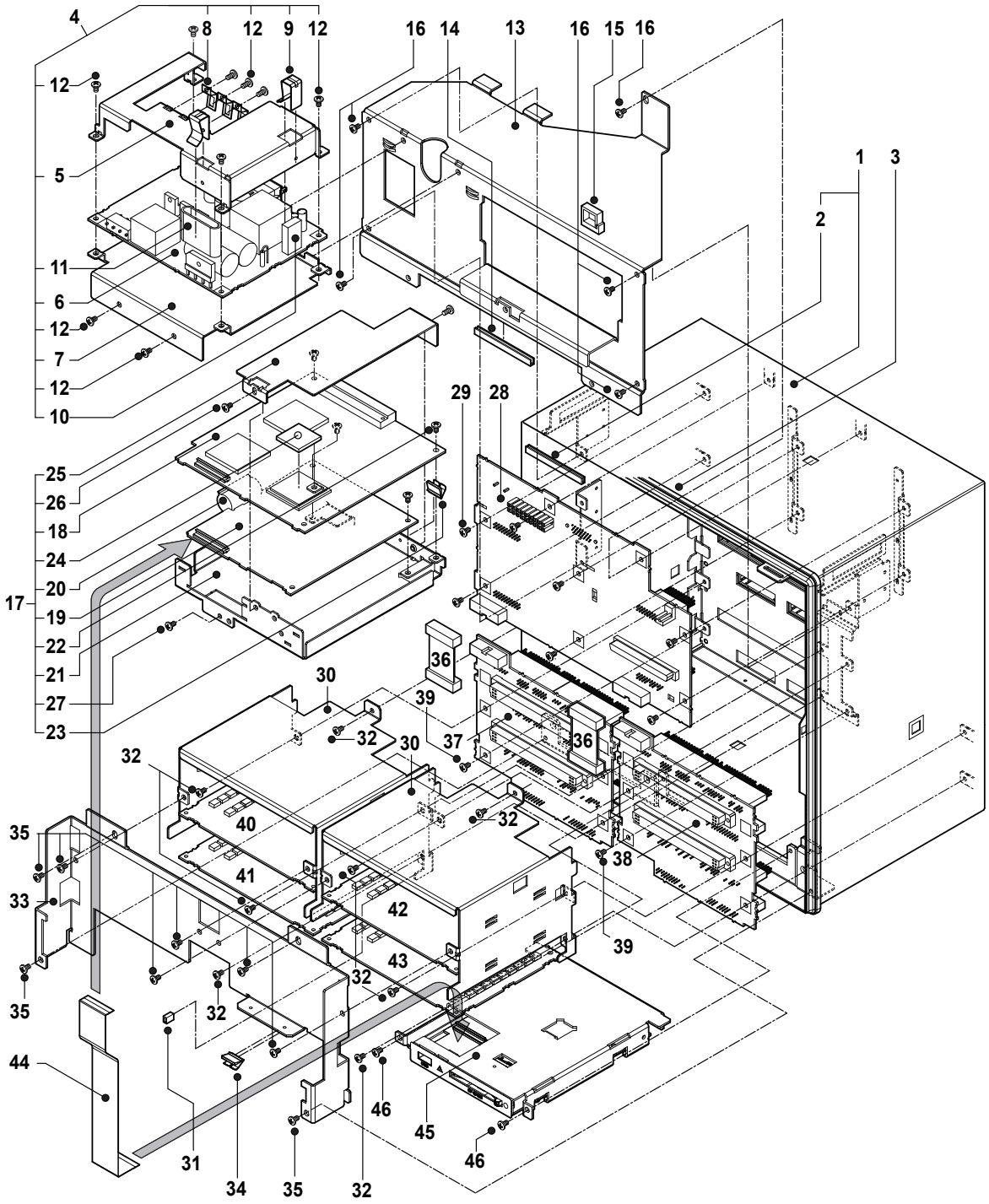
4 Main Assembly (1/3)

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## Main Assembly (2/3) 5

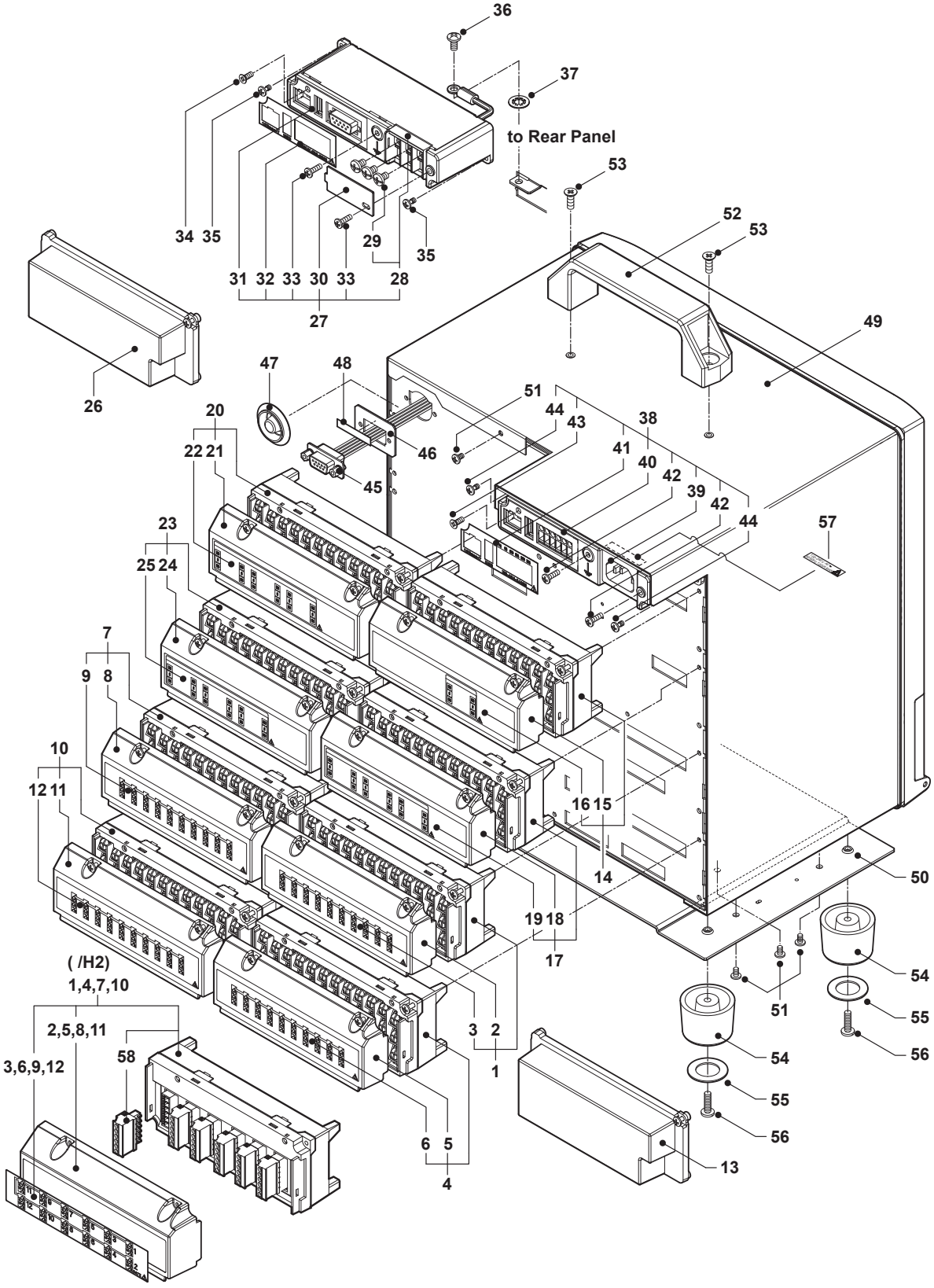
| Item | Part No. | Model | Qty DX2004 | DX2008 | DX2010 | DX2020 | DX2030 | DX2040 | DX2048 | Description |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | B8706CA | | 1 | 1 | 1 | 1 | 1 | 1 | 1 | Case Assembly |
| 2 | A9088KY | | 1 | 1 | 1 | 1 | 1 | 1 | 1 | Clamp |
| 3 | B8706FY | | 1 | 1 | 1 | 1 | 1 | 1 | 1 | Packing |
| 4 | B8706DA | | 1 | 1 | 1 | 1 | 1 | 1 | 1 | Power Assembly (not /P1) } (select) |
| | B8706EA | | 1 | 1 | 1 | 1 | 1 | 1 | 1 | Power Assembly (24VAC/DC) ( /P1) } |
| 5 | B8706DC | | 1 | 1 | 1 | 1 | 1 | 1 | 1 | Power Cover (not /P1) } (select) |
| | B8706EC | | 1 | 1 | 1 | 1 | 1 | 1 | 1 | Power Cover ( /P1) } |
| 6 | B8706RK | | 1 | 1 | 1 | 1 | 1 | 1 | 1 | Power PBA (not /P1) } (select) |
| | B8706RQ | | 1 | 1 | 1 | 1 | 1 | 1 | 1 | Power PBA ( /P1) } |
| 7 | B8706DB | | 1 | 1 | 1 | 1 | 1 | 1 | 1 | Power Base |
| 8 | A1252EH | | 3 | 3 | 3 | 3 | 3 | 3 | 3 | Heat Sink (not /P1) } (select) |
| | A1252EH | | 6 | 6 | 6 | 6 | 6 | 6 | 6 | Heat Sink ( /P1) } |
| 9 | B1007BL | | 2 | 2 | 2 | 2 | 2 | 2 | 2 | Clamp (not /P1) } (select) |
| | B1007BL | | 1 | 1 | 1 | 1 | 1 | 1 | 1 | Clamp ( /P1) } |
| 10 | S9763VK | | 1 | 1 | 1 | 1 | 1 | 1 | 1 | Thermal Sheet |
| 11 | A1258EH | | 1 | 1 | 1 | 1 | 1 | 1 | 1 | ACS Heat Sink (not /P1) |
| 12 | Y9305LB | | 9 | 9 | 9 | 9 | 9 | 9 | 9 | Screw (M3x5) (not /P1) } (select) |
| | Y9305LB | | 12 | 12 | 12 | 12 | 12 | 12 | 12 | Screw (M3x5) ( /P1) } |
| 13 | B8706EE | | 1 | 1 | 1 | 1 | 1 | 1 | 1 | Top Bracket |
| 14 | A9089KY | | 1 | 1 | 1 | 1 | 1 | 1 | 1 | Clamp |
| 15 | B9622FW | | 1 | 1 | 1 | 1 | 1 | 1 | 1 | Fastener |
| 16 | Y9305LB | | 5 | 5 | 5 | 5 | 5 | 5 | 5 | Screw (M3x5) |
| 17 | B8706DD | | 1 | 1 | 1 | 1 | 1 | 1 | 1 | Main Assembly (not /USB) } (select) |
| | B8706ED | | 1 | 1 | 1 | 1 | 1 | 1 | 1 | Main Assembly ( /USB) } |
| 18 | B8706RA | | 1 | 1 | 1 | 1 | 1 | 1 | 1 | Main PBA |
| 19 | B8706NC | | 1 | 1 | 1 | 1 | 1 | 1 | 1 | Sub PBA EXP. Boot (not /USB) } (select) |
| | B8706PC | | 1 | 1 | 1 | 1 | 1 | 1 | 1 | Sub PBA EXP. Boot ( /USB) } |
| 20 | B9900BR | | 1 | 1 | 1 | 1 | 1 | 1 | 1 | Battery Assembly |
| 21 | B8706DE | | 1 | 1 | 1 | 1 | 1 | 1 | 1 | CPU Bracket |
| 22 | Y9305LB | | 4 | 4 | 4 | 4 | 4 | 4 | 4 | Screw (M3x5) |
| 23 | B9968GU | | 1 | 1 | 1 | 1 | 1 | 1 | 1 | Shield Finger |
| 24 | B8706FW | | 1 | 1 | 1 | 1 | 1 | 1 | 1 | GEL Sheet |
| 25 | B8706DF | | 1 | 1 | 1 | 1 | 1 | 1 | 1 | Heat Sink |
| 26 | Y9305LB | | 2 | 2 | 2 | 2 | 2 | 2 | 2 | Screw (M3x5) |
| 27 | Y9305LB | | 1 | 1 | 1 | 1 | 1 | 1 | 1 | Screw (M3x5) |
| 28 | B8706RE | | 1 | 1 | 1 | 1 | 1 | 1 | 1 | Main Mother PBA |
| 29 | Y9305LB | | 7 | 7 | 7 | 7 | 7 | 7 | 7 | Screw (M3x5) |
| 30 | B8706EB | | 1 | 1 | 1 | 1 | 2 | 2 | 2 | AD Guide (select) |
| 31 | A9088KY | | 1 | 1 | 1 | 1 | 1 | 1 | 1 | Clamp |
| 32 | Y9305LB | | 4 | 4 | 4 | 4 | 8 | 8 | 8 | Screw (M3x5) (select) |
| 33 | B8706EF | | 1 | 1 | 1 | 1 | 1 | 1 | 1 | Bottom Bracket |
| 34 | B9968GU | | 1 | 1 | 1 | 1 | 1 | 1 | 1 | Shield Finger |
| 35 | Y9305LB | | 6 | 6 | 6 | 6 | 8 | 8 | 8 | Screw (M3x5) (select) |
| 36 | B8706MF | | 1 | 1 | 1 | 1 | 2 | 2 | 2 | AD-Main Mother Cable (select) |
| 37 | B8706SD | | 1 | – | 1 | – | – | – | – | AD Mother 1Slot PBA } (select) |
| | B8706RD | | – | 1 | – | 1 | 1 | 1 | 1 | AD Mother 2Slot PBA } |
| 38 | B8706SD | | – | – | – | – | 1 | – | – | AD Mother 1Slot PBA } (select) |
| | B8706RD | | – | – | – | – | – | 1 | 1 | AD Mother 2Slot PBA } |
| 39 | Y9305LB | | 1 | 1 | 1 | 1 | 2 | 2 | 2 | Screw (M3x5) (select) |

## 6 Main Assembly (3/3)

| Item | Part No. | Model | Qty DX2004 | DX2008 | DX2010 | DX2020 | DX2030 | DX2040 | DX2048 | Description | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 40 | B8706SP | | – | – | 1 | 1 | 1 | 1 | – | AD STD 10Ch (not /N1 /N2) | (select) |
| | B8706TP | | – | – | – | – | – | – | 1 | AD STD 12Ch (not /N1 /N2) | |
| | B8706SR | | 1 | 1 | – | – | – | – | – | AD ISO 4Ch | |
| | B8706SS | | – | – | 1 | 1 | 1 | 1 | – | AD ISO 10Ch (or /N1 /N2) | |
| | B8706TS | | – | – | – | – | – | – | 1 | AD ISO 12Ch (or /N1 /N2) | |
| 41 | B8706SP | | – | – | – | 1 | 1 | 1 | – | AD STD 10Ch (not /N1 /N2) | (select) |
| | B8706TP | | – | – | – | – | – | – | 1 | AD STD 12Ch (not /N1 /N2) | |
| | B8706SR | | – | 1 | – | – | – | – | – | AD ISO 4Ch | |
| | B8706SS | | – | – | – | 1 | 1 | 1 | – | AD ISO 10Ch (or /N1 /N2) | |
| | B8706TS | | – | – | – | – | – | – | 1 | AD ISO 12Ch (or /N1 /N2) | |
| 42 | B8706SP | | – | – | – | – | 1 | 1 | – | AD STD 10Ch (not /N1 /N2) | (select) |
| | B8706TP | | – | – | – | – | – | – | 1 | AD STD 12Ch (not /N1 /N2) | |
| | B8706SS | | – | – | – | – | 1 | 1 | – | AD ISO 10Ch (or /N1 /N2) | |
| | B8706TS | | – | – | – | – | – | – | 1 | AD ISO 12Ch (or /N1 /N2) | |
| 43 | B8706SP | | – | – | – | – | – | 1 | – | AD STD 10Ch (not /N1 /N2) | (select) |
| | B8706TP | | – | – | – | – | – | – | 1 | AD STD 12Ch (not /N1 /N2) | |
| | B8706SS | | – | – | – | – | – | 1 | – | AD ISO 10Ch (or /N1 /N2) | |
| | B8706TS | | – | – | – | – | – | – | 1 | AD ISO 12Ch (or /N1 /N2) | |
| 44 | B8706MH | | 1 | 1 | 1 | 1 | 1 | 1 | 1 | FFC (0.5MM-170MM) | |
| 45 | B8706DG | | 1 | 1 | 1 | 1 | 1 | 1 | 1 | CF Assembly (128 MB, not /USB1) *1 | (select) |
| | B8706EG | | 1 | 1 | 1 | 1 | 1 | 1 | 1 | CF Assembly (128 MB, /USB1) *1 | |
| | B8706DH | | 1 | 1 | 1 | 1 | 1 | 1 | 1 | CF Assembly (256 MB, not /USB1) *2 | |
| | B8706EH | | 1 | 1 | 1 | 1 | 1 | 1 | 1 | CF Assembly (256 MB, /USB1) *2 | |
| | B8706DM | | 1 | 1 | 1 | 1 | 1 | 1 | 1 | CF Assembly (512 MB, not /USB1) *3 | |
| | B8706EM | | 1 | 1 | 1 | 1 | 1 | 1 | 1 | CF Assembly (512 MB, /USB1) *3 | |
| 46 | Y9305LB | | 2 | 2 | 2 | 2 | 2 | 2 | 2 | Screw (M3x5) | |

Note : *1 Standard Memory
*2 Large Memory
*3 Standard Memory (400 MB)

## Terminal Assembly (1/4) 7

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## 8 Terminal Assembly (2/4)

| Item | Part No. | Qty | Description |
|---|---|---|---|
| 1 | – | 1 | Input Terminal Assembly (select) *1 |
| 2 | B9968DF | 1 | Cover Assembly (not /H2) } (select) |
| | B8705FF | 1 | Cover Assembly ( /H2) } (select) |
| 3 | – | 1 | Name Plate (select) *2 |
| 4 | – | 1 | Input Terminal Assembly (select) *3 |
| 5 | B9968DF | 1 | Cover Assembly (not /H2) } (select) |
| | B8705FF | 1 | Cover Assembly ( /H2) } (select) |
| 6 | – | 1 | Name Plate (select) *4 |
| 7 | – | 1 | Input Terminal Assembly (select) *5 |
| 8 | B9968DF | 1 | Cover Assembly (not /H2) } (select) |
| | B8705FF | 1 | Cover Assembly ( /H2) } (select) |
| 9 | – | 1 | Name Plate (select) *6 |
| 10 | – | 1 | Input Terminal Assembly (select) *7 |
| 11 | B9968DF | 1 | Cover Assembly (not /H2) } (select) |
| | B8705FF | 1 | Cover Assembly ( /H2) } (select) |
| 12 | – | 1 | Name Plate (select) *8 |
| 58 | A1923JT | – | Connector ( /H2) (select) |
| 13 | B9968DN | – | Conn Cover Assembly (select) *9 |
| 14 | – | 1 | Option Terminal Assembly (select) *10 |
| 15 | B9968DF | 1 | Cover Assembly |
| 16 | – | 1 | Name Plate (select) *11 |
| 17 | – | 1 | Option Terminal Assembly (select) *12 |
| 18 | B9968DF | 1 | Cover Assembly |
| 19 | – | 1 | Name Plate (select) *13 |
| 20 | – | 1 | Option Terminal Assembly (select) *14 |
| 21 | B9968DF | 1 | Cover Assembly |
| 22 | – | 1 | Name Plate (select) *15 |
| 23 | – | 1 | Option Terminal Assembly (select) *16 |
| 24 | B9968DF | 1 | Cover Assembly |
| 25 | – | 1 | Name Plate (select) *17 |
| 26 | B9968DN | – | Conn Cover Assembly (select) *18 |
| 27 | – | 1 | S-PWR Terminal (select) *19 |
| 28 | – | 1 | POW TERM SCREW (select) *20 |
| 29 | E9655FX | 3 | Screw (ETO Screw) |
| 30 | B8706FE | 1 | Plate |
| 31 | – | 1 | Plate (select) *21 |
| 32 | – | 1 | Plate (select) *22 |
| 33 | Y9310LB | 2 | Screw (M3x10) |
| 34 | Y9306EB | 1 | Screw (M3x6) |
| 35 | B9900SG | 2 | Screw |
| 36 | Y9405LB | 1 | Screw (M4x5) |
| 37 | Y9401WL | 1 | Washer |
| 38 | – | – | I-PWR Terminal (select) *23 |
| 39 | – | – | POW TERM INL (select) *24 |
| 40 | – | – | Plate (select) *25 |
| 41 | – | – | Plate (select) *26 |
| 42 | Y9310LB | 2 | Screw (M3x10) |
| 43 | Y9306EB | 1 | Screw (M3x6) |
| 44 | B9900SG | 2 | Screw |
| 45 | B9968MN | 1 | VGA Cable (select) ( /D5) |
| 46 | B9968HS | 1 | Plate (select) ( /D5) |
| 47 | B9968EK | 1 | Cap (select) (not /D5) |
| 48 | B9968HT | 1 | Name Plate (select) ( /D5) |
| 49 | B8706CW | 1 | Cover Assembly |
| 50 | B8706CZ | 1 | Bracket |
| 51 | Y9304LB | 7 | Screw (M3x4) |
| 52 | B9961BQ | 1 | Handle |
| 53 | Y9412ES | 2 | Screw (M4x12) |
| | C1024FC | – | Adhesive } ( /H5□) (select) *27 |
| 54 | A9055ZB | 4 | Case Accessories |
| 55 | B9805KS | 4 | Bumper |
| 56 | Y9414LB | 4 | Screw (M4x14) |
| 57 | B8706GX | 1 | Name Plate (not /P1) |
| | B8706GW | 1 | Name Plate ( /P1) |

Note: *1 to *18 see page 9
*19 to *26 see page 10
*27 /H5□ : /H5 /H5D /H5F /H5H /H5J /H5M /H5R

## Terminal Assembly (3/4) 9

### Input Terminal Assembly

| MODEL | MS CODE (OPTION) AND | OR | NOT | INP Terminal 1 *1 Item 1 | INP Terminal 1 *2 Item 3 | INP Terminal 2 *3,*9 Item 4 | INP Terminal 2 *4 Item 6 | INP Terminal 3 *5,*9 Item 7 | INP Terminal 3 *6 Item 9 | INP Terminal 4 *7,*9 Item 10 | INP Terminal 4 *8 Item 12 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| DX2004 | | | /H2 | B9968LJ | B9968FV | B9968DN | – | B9968DN | – | B9968DN | – |
| | /H2 | | | B8706JP | B9968JJ | B9968DN | – | B9968DN | – | B9968DN | – |
| DX2008 | | | /H2 | B9968LJ | B9968FV | B9968LK | B9968FW | B9968DN | – | B9968DN | – |
| | /H2 | | | B8706JP | B9968JJ | B8706JR | B9968JK | B9968DN | – | B9968DN | – |
| DX2010 | | | /H2 /N1 /N2 | B9968LE | B9968EP | B9968DN | – | B9968DN | – | B9968DN | – |
| | | /N1 /N2 | /H2 | B9968LN | B9968FS | B9968DN | – | B9968DN | – | B9968DN | – |
| | /H2 | | /N1 /N2 | B8706HS | B9968JQ | B9968DN | – | B9968DN | – | B9968DN | – |
| | /H2 | /N1 /N2 | | B8706JS | B9968JR | B9968DN | – | B9968DN | – | B9968DN | – |
| DX2020 | | | /H2 /N1 /N2 | B9968LE | B9968EP | B9968LF | B9968EQ | B9968DN | – | B9968DN | – |
| | | /N1 /N2 | /H2 | B9968LN | B9968FS | B9968LP | B9968FT | B9968DN | – | B9968DN | – |
| | /H2 | | /N1 /N2 | B8706HS | B9968JQ | B8706HT | B9968JS | B9968DN | – | B9968DN | – |
| | /H2 | /N1 /N2 | | B8706JS | B9968JR | B8706JT | B9968JT | B9968DN | – | B9968DN | – |
| DX2030 | | | /H2 /N1 /N2 | B9968LE | B9968EP | B9968LF | B9968EQ | B9968LG | B9968ER | B9968DN | – |
| | | /N1 /N2 | /H2 | B9968LN | B9968FS | B9968LP | B9968FT | B9968LQ | B9968FU | B9968DN | – |
| | /H2 | | /N1 /N2 | B8706HS | B9968JQ | B8706HT | B9968JS | B8706HU | B9968JU | B9968DN | – |
| | /H2 | /N1 /N2 | | B8706JS | B9968JR | B8706JT | B9968JT | B8706JU | B9968JV | B9968DN | – |
| DX2040 | | | /H2 /N1 /N2 | B9968LE | B9968EP | B9968LF | B9968EQ | B9968LG | B9968ER | B8706HL | B8706AJ |
| | | /N1 /N2 | /H2 | B9968LN | B9968FS | B9968LP | B9968FT | B9968LQ | B9968FU | B8706JH | B8706AN |
| | /H2 | | /N1 /N2 | B8706HS | B9968JQ | B8706HT | B9968JS | B8706HU | B9968JU | B8706HV | B8706AS |
| | /H2 | /N1 /N2 | | B8706JS | B9968JR | B8706JT | B9968JT | B8706JU | B9968JV | B8706JV | B8706AW |
| DX2048 | | | /H2 /N1 /N2 | B9968LH | B9967FB | B8706HM | B8706AK | B8706HN | B8706AL | B8706HP | B8706AM |
| | | /N1 /N2 | /H2 | B9968LR | B9967FF | B8706JJ | B8706AP | B8706JK | B8706AQ | B8706JL | B8706AR |
| | /H2 | | /N1 /N2 | B8706HW | B9968JN | B8706HX | B8706AT | B8706HY | B8706AU | B8706HZ | B8706AV |
| | /H2 | /N1 /N2 | | B8706JW | B9968JP | B8706JX | B8706AX | B8706JY | B8706AY | B8706JZ | B8706AZ |

### Option Terminal Assembly

#### OPT Terminal 1

| MS CODE (OPTION) AND | OR | NOT | *10,*18 Item 14 | *11 Item 16 |
|---|---|---|---|---|
| /A1 | | /F1 /PM1 /R1 | B9968KA | B9968EW |
| /A2 | | /F1 /PM1 /R1 | B9968KC | B9968EY |
| | /A3 /A4 /A5 | /F1 /PM1 /R1 | B9968KE | B9968FA |
| /A1 /R1 | | /F1 /PM1 | B9968KB | B9968EX |
| /A2 /R1 | | /F1 /PM1 | B9968KD | B9968EZ |
| /A3 /R1 | | /F1 /PM1 | B9968KJ | B9968FE |
| /A4 /R1 | | | | |
| /A5 /R1 | | | | |
| /R1 | | /A1 /A2 /A3 /A4 /A5 /F1 /F2 /PM1 | B9968KK | B9968FF |
| /A1 /F1 | | /PM1 /R1 | B9968KL | B9968FH |
| /A2 /F1 | | /PM1 /R1 | B9968KN | B9968FK |
| /A3 /F1 | | /PM1 /R1 | B9968KQ | B9968FM |
| /A4 /F1 | | /PM1 /R1 | | |
| /F1 | | /A1 /A2 /A3 /A4 /A5 /PM1 /R1 | | |
| /A1 /F1 /R1 | | | B9968KM | B9968FJ |
| /A2 /F1 /R1 | | /PM1 | B9968KP | B9968FL |
| /A3 /F1 /R1 | | /PM1 | B9968KR | B9968FN |
| /A4 /F1 /R1 | | /PM1 | | |
| /F1 /R1 | | /A1 /A2 /A3 /A4 /A5 /PM1 | | |
| /A1 /PM1 | | /A2 /F1 | B8703FA | B8703AL |
| /A2 /PM1 | | /A1 /F1 | B8703FB | B8703AM |
| /A1 /F1 /PM1 | | | B8703FC | B8703AN |
| /PM1 | /A3 /A4 | /F1 | B8703FD | B8703AP |
| /PM1 | | /A1 /A2 /A3 /A4 /F1 | | |
| /F1 /PM1 | | /A1 /A2 | B8703FE | B8703AQ |
| /F2 | | /R1 | B9968KN | B9968FK |
| /F2 /R1 | | | B9968KP | B9968FL |
| | | /A1 /A2 /A3 /A4 /A5 /F1 /F2 /PM1 /R1 | B9968DN | |

#### OPT Terminal 2

| MS CODE (OPTION) AND | OR | NOT | *12,*18 Item 17 | *13 Item 19 |
|---|---|---|---|---|
| /A3 | /F1 /PM1 | | B9968KF | B9968FB |
| | /A4 /A5 /F2 | | | |
| | | /A3 /A4 /A5 /F1 /F2 /PM1 | B9968DN | |

#### OPT Terminal 3

| MS CODE (OPTION) AND | OR | NOT | *14,*18 Item 20 | *15 Item 22 |
|---|---|---|---|---|
| /A4 | /F1 /PM1 | | B9968KG | B9968FC |
| | /A5 /F2 | | | |
| /TPS8 | | | B9968KW | B9968FP |
| | | /A4 /A5 /F1 /F2 /PM1 /TPS8 | B9968DN | |

#### OPT Terminal 4

| MS CODE (OPTION) AND | OR | NOT | *16,*18 Item 23 | *17 Item 25 |
|---|---|---|---|---|
| | /A5 /F2 | | B9968KH | B9968FD |
| /TPS4 | | | B9968KW | B9968FP |
| /TPS8 | | | | |
| | | /A5 /F2 /TPS4 /TPS8 | B9968DN | |

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10 Terminal Assembly (4/4)

## Power Terminal Assembly

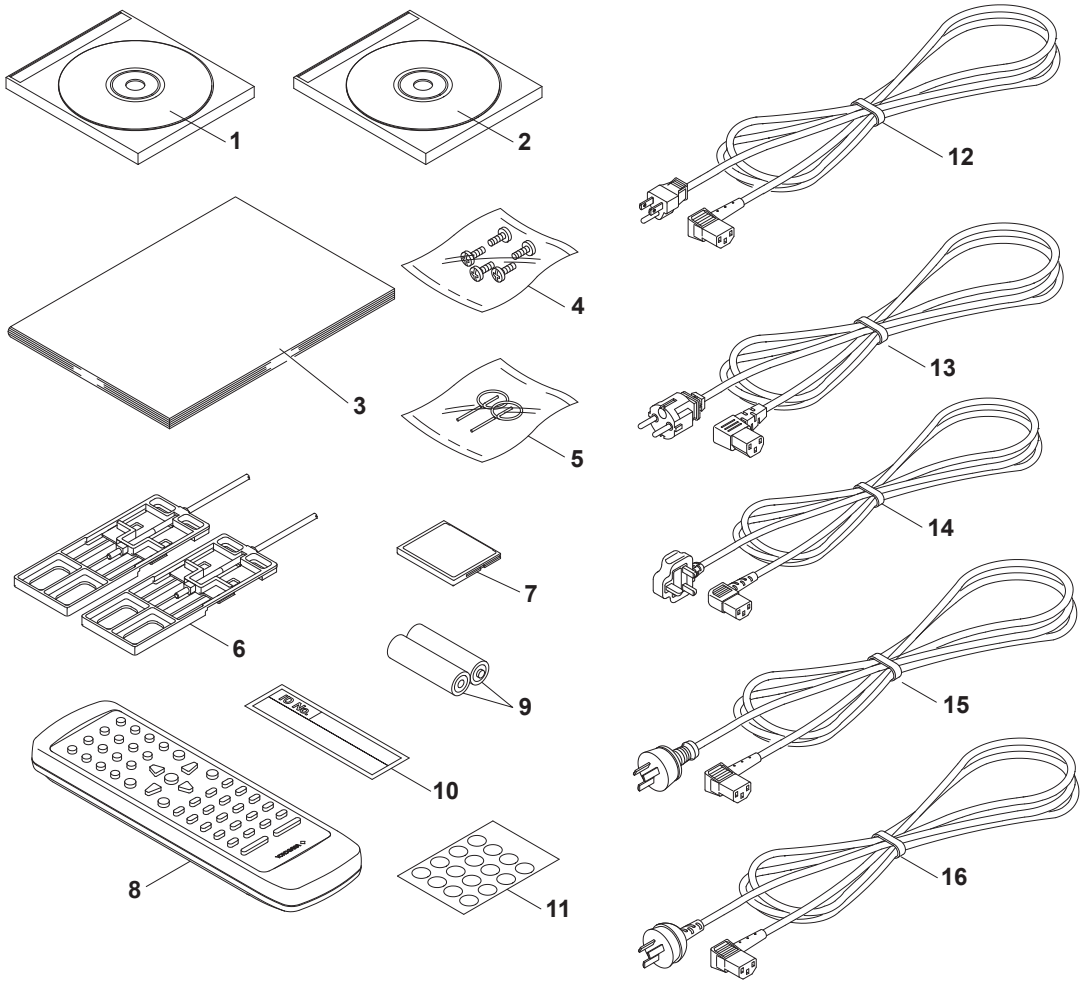
### S-PWR Terminal

| MS CODE (OPTION) | | | *19 | *20 | *21 | *22 |
|---|---|---|---|---|---|---|
| AND | OR | NOT | Item 27 | Item 28 | Item 31 | Item 32 |
| | | /C2 /C3 /H5 /H5D /H5F /H5H /H5J /H5M /H5R /P1 /USB1 | B8706DN | B8706RL | B8706DW | B8706FF |
| /C2 | | /C3 /H5 /H5D /H5F /H5H /H5J /H5M /H5R /P1 /USB1 | B8706DP | B8706RM | B8706DW | B8706FH |
| /C3 | | /C2 /H5 /H5D /H5F /H5H /H5J /H5M /H5R /P1 /USB1 | B8706DQ | B8706SM | B8706DX | B8706FJ |
| /CP1 | | /C2 /C3 /H5 /H5D /H5F /H5H /H5J /H5M /H5R /P1 /USB1 | B8706HD | B8706RY | B8706DW | B8706FT |
| /USB1 | | /C2 /C3 /H5 /H5D /H5F /H5H /H5J /H5M /H5R /P1 | B8706EN | B8706SL | B8706DW | B8706FG |
| /C2 /USB1 | | /C3 /H5 /H5D /H5F /H5H /H5J /H5M /H5R /P1 | B8706EP | B8706RN | B8706DW | B8706FK |
| /C3 /USB1 | | /C2 /H5 /H5D /H5F /H5H /H5J /H5M /H5R /P1 | B8706EQ | B8706SN | B8706DX | B8706FL |
| /CP1 /USB1 | | /C2 /C3 /H5 /H5D /H5F /H5H /H5J /H5M /H5R /P1 | B8706JD | B8706SY | B8706DW | B8706FU |
| /P1 | /H5 | /C2 /C3 /USB1 | B8706HA | B8706PL | B8706DW | B8706FF |
| /C2 /P1 | /H5 | /C3 /USB1 | B8706HB | B8706PM | B8706DW | B8706FH |
| /C3 /P1 | /H5 | /C2 /USB1 | B8706HC | B8706QM | B8706DX | B8706FJ |
| /CP1 /P1 | | /C2 /C3 /H5 /H5D /H5F /H5H /H5J /H5M /H5R /USB1 | B8706HF | B8706PY | B8706DW | B8706FT |
| /P1 /USB1 | /H5 | /C2 /C3 | B8706JA | B8706QL | B8706DW | B8706FG |
| /C2 /P1 /USB1 | /H5 | /C3 | B8706JB | B8706PN | B8706DW | B8706FK |
| /C3 /P1 /USB1 | /H5 | /C2 | B8706JC | B8706QN | B8706DX | B8706FL |
| /CP1 /P1 /USB1 | | /C2 /C3 /H5 /H5D /H5F /H5H /H5J /H5M /H5R | B8706JF | B8706QY | B8706DW | B8706FU |

### I-PWR Terminal

| MS CODE (OPTION) | | | *23 | *24 | *25 | *26 |
|---|---|---|---|---|---|---|
| AND | OR | NOT | Item 38 | Item 39 | Item 40 | Item 41 |
| | /H5D /H5F /H5H /H5J /H5M /H5R | /C2 /C3 /P1 /USB1 | B8706DR | B8706TL | B8706DW | B8706FF |
| /C2 | /H5D /H5F /H5H /H5J /H5M /H5R | /C3 /P1 /USB1 | B8706DS | B8706TM | B8706DW | B8706FH |
| /C3 | /H5D /H5F /H5H /H5J /H5M /H5R | /C2 /P1 /USB1 | B8706DT | B8706UM | B8706DX | B8706FJ |
| /CP1 | /H5 /H5D /H5F /H5H /H5J /H5M /H5R | /C2 /P1 /USB1 | B8706HE | B8706TY | B8706DW | B8706FT |
| /USB1 | /H5D /H5F /H5H /H5J /H5M /H5R | /C2 /C3 /P1 | B8706ER | B8706UL | B8706DW | B8706FG |
| /C2 /USB1 | /H5D /H5F /H5H /H5J /H5M /H5R | /C3 /P1 | B8706ES | B8706TN | B8706DW | B8706FK |
| /C3 /USB1 | /H5D /H5F /H5H /H5J /H5M /H5R | /C2 /P1 | B8706ET | B8706UN | B8706DX | B8706FL |
| /CP1 /USB1 | /H5 /H5D /H5F /H5H /H5J /H5M /H5R | /C2 /C3 /P1 | B8706JE | B8706UY | B8706DW | B8706FU |

## Standard Accessories 11




| Item | Part No. | Qty | Description |
|---|---|---|---|
| 1 | B9991AD | 1 | CD for DAQSTANDARD |
| 2 | B8706ZZ | 1 | CD-ROM for Manuals |
| 3 | – | 1 | Manuals |
| 4 | E9655FX | 5 | B.H.Screw (M4x6) |
| 5 | B8706FX | 2 | Door Lock Key |
| 6 | B9900BX | 2 | Bracket Assembly (not /H5 /H5□) |
| 7 | B8706NQ | 1 | CF Card 128 MB (The size and model may change.) |
| 8 | A8702EA | 1 | Remote Controller ( /KB1) |
| 9 | A1070EB | 2 | Battery ( /KB1) |
| 10 | B8702AE | 1 | Name Plate ( /KB1) |
| 11 | B8702AD | 1 | Name Plate ( /KB1) |
| 12 | A1006WD | 1 | Power Supply Code (UL /CSA standard) *1,*2 |
| 13 | A1009WD | 1 | Power Supply Code (VDE standard) *3 |
| 14 | A1054WD | 1 | Power Supply Code (BS standard) *4 |
| 15 | A1024WD | 1 | Power Supply Code (AS standard) *5 |
| 16 | A1064WD | 1 | Power Supply Code (GB standard) *6 |

(not /P1) (select)

Note:
*1 DX2 □□□ -/H5M
*2 DX2 □□□ -/H5D
*3 DX2 □□□ -/H5F
*4 DX2 □□□ -/H5J
*5 DX2 □□□ -/H5R
*6 DX2 □□□ -/H5H

Apr. 2010

**CMPL 04L42B01-01E**

# 7.1 Introduction

This section describes replacing parts necessary for maintenance and repair.

## Replaceable Parts

When it becomes necessary to replace parts, it is recommended to replace entire assemblies rather than specific parts within assemblies.
If you plan on replacing parts yourself, please refer to the Customer Maintenance Parts List (CMPL) in chapter 6 for a list of parts supplied by Yokogawa. Parts not on this list are not available through Yokogawa. The CMPL uses the following column titles.

- Number
- Part No.
- Q'ty
- Description

## If Servicing is Required

If servicing is required, contact your nearest Yokogawa dealer with the following information.

- Address
- Contact name and phone number
- Product model name, suffix code, and option codes
- Description of the problem, measured results, displayed error messages, and any other pertinent information.

# 7.2 Recommended Replacement Periods for Worn Parts

To preserve the reliability of the DX and to use the DX in a good condition for an extended time, it is recommended that periodic replacements be made on parts. The replacement parts may change to accommodate preventive maintenance over extended time. Be sure to check with your nearest YOKOGAWA dealer.
The following table shows the recommended replacement period for expendable parts. The replacement period shown here applies when the DX is used under standard operating conditions. For the actual replacement period, consider the actual conditions of use. Replacement of parts will be carried out by a YOKOGAWA engineer or an engineer certified by YOKOGAWA. Contact your nearest YOKOGAWA dealer when such replacement is necessary.

**DX1000/DX1000N**

| Item | Replacement period | Name | Part No. | Quantity Used | Notes |
|---|---|---|---|---|---|
| LCD | 5 years | Back Light Unit | B8703KB | 1 | |
| Battery | 10 years | Battery Assembly | B9900BR | 1 | |
| Dust and water proof rubber strip | 5 years | Packing | B8705FY | 1 | |
| | 5 years | Key Case Assembly | B8705BM | 1 | Without /KB1 or /KB2 |
| | 5 years | Key Case Assembly | B8705BY | 1 | With /KB1 or /KB2 |
| Aluminum electrolytic capacitor | 5 years* | Power supply Assembly | – | 1 | |
| | 5 years* | AD Assembly | Depends on the model | | |

* Replacement Period at the Upper Limit of the Normal Operating Temperature (50°C)
The replacement period varies depending on the temperature in which the instrument is operated, and the instrument's specifications. If the instrument is used in a 30°C environment, it may be operational for 10 years or more.

**DX2000**

| Item | Replacement period | Name | Part No. | Quantity Used | Notes |
|---|---|---|---|---|---|
| LCD | 5 years | Back Light Unit | B9968PA | 1 | Before instrument number S5J402213 2009. |
| | | | A1048VZ | 1 | Instrument number S5J402213 2009 and later. |
| Battery | 10 years | Battery Assembly | B9900BR | 1 | |
| Dust and water proof rubber strip | 5 years | Packing | B8706FY | 1 | |
| | 5 years | Key Case Assembly | B8706BM | 1 | English specifications |
| | 5 years | Key Case Assembly | B8706BY | 1 | Japanese specifications |
| Aluminum electrolytic capacitor | 5 years* | Power supply Assembly | – | 1 | |
| | 5 years* | AD Assembly | Depends on the model | | |

* Replacement Period at the Upper Limit of the Normal Operating Temperature (50°C)
The replacement period varies depending on the temperature in which the instrument is operated, and the instrument's specifications. If the instrument is used in a 30°C environment, it may be operational for 10 years or more.

***Note***

- The LCD should be replaced when the brightness of the LCD is reduced by half its original brightness. The brighter the display, the shorter the "half-life" of the LCD. Reductions in brightness vary depending on operating conditions, and is a subjective determination. The actual replacement period should be determined based on these considerations.
- The LCD screen may start to yellow over time. The brighter the screen, the faster such changes may progress.

# 7.3 Pulling Out the Inner Instrument (DX1000N)

## Notes

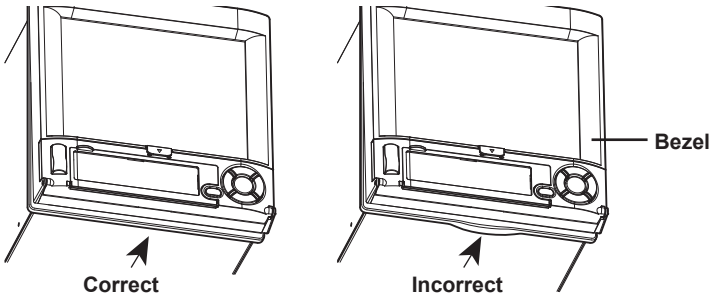
This section explains how to pull out the inner instrument. Refer to these instructions as well when reinstalling.

**WARNING**

- When reinstalling the inner instrument, check that no foreign objects are inside the case, that the connector pins are not bent, and that no other abnormalities exist. These can be causes of fire, electric shock, and damage to instruments.
- Always turn OFF the power switch when pulling out the inner instrument.
  - Certain locations inside the instrument carry high voltages, and are dangerous.
  - Pulling out PCBs while the power is ON can damage electronic components.
- Circuit patterns of the printed circuit board are exposed. Be careful when handling so that hands or fingers are not injured by the protruding pins.

**CAUTION**

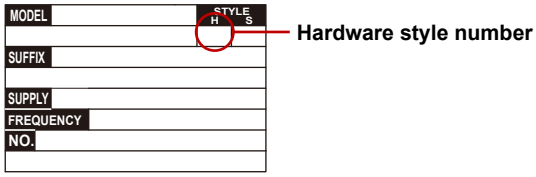
- Do not disassemble the inner instrument. When replacing components such as the power supply assembly, or when any structural changes are made, you must perform tests of the insulation resistance, withstand voltage, and protective grounding function (see chapter 3).
- Tighten the screw to a torque within the specified range.
  - If the bezel screw is tightened to less than the specified torque, the protective grounding function may not function normally.
  - Tightening the screw to a torque above the specified range can damage the screw.
- When releasing the bezel latches, the bezel can break if the bottom is pulled out forcefully. Do not forcefully pull towards you until the latches are released.
- Circuit patterns of the printed circuit board are exposed. If other metalic materials touch these patterns, electrical shorting will occur, causing the circuit to be damaged or burnt.
- The internal circuitry is vulnerable to damage from static electricity. Take appropriate measures to ensure that static electricity is not applied to the internal circuits.
- When securing the bezel, note the following points:
  - Make sure the packing is properly and completely affixed around the bezel. If not properly affixed, screws can be damaged, and the water and dust proof capability may be impaired.




  - Push in the bezel so that it is vertical before tightening the screws. If the bezel is at an angle when the screws are tightened, screws can be damaged.

## Testing

If the DX hardware style number is **1**, perform the tests below (see chapter 3) after reinstalling the inner instrument.
The hardware style number is printed on the name plate. The name plate is on the top of the case (outer side).




**When the hardware style number is 1**

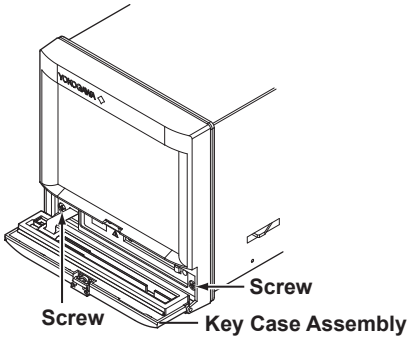
- Insulation resistance test
- Withstand voltage test
- Check of the protective grounding function

**When the hardware style number is 2 or later**

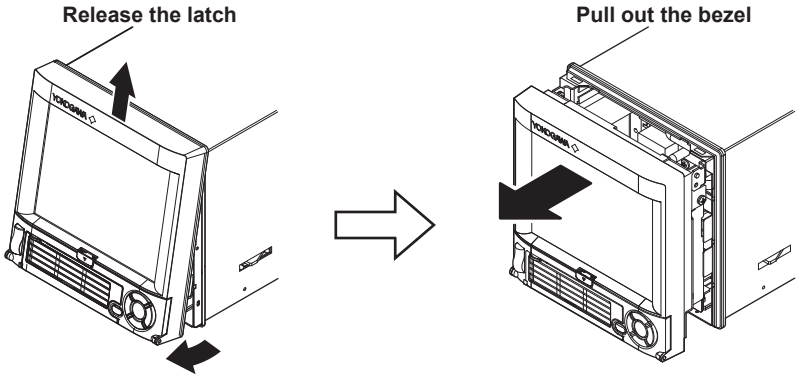
No test is required, but check whether the bezel attachment screws are tightened to within the specified torque range.

## Procedures

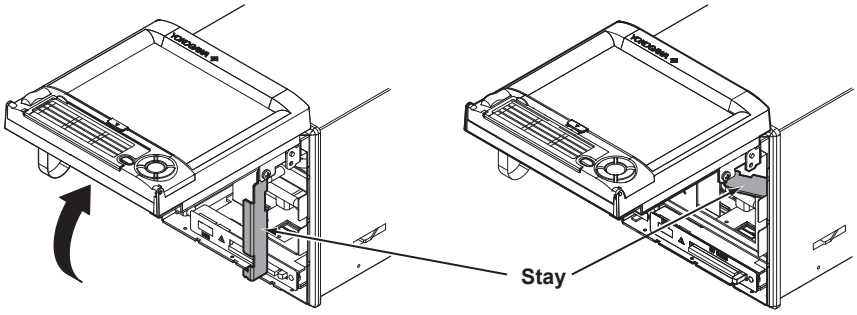
1. Open the Key Case Assembly. If any USB devices are connected, remove them.
2. Loosen the 2 screws (screw tightening torque: 0.6 to 0.7 N·m).



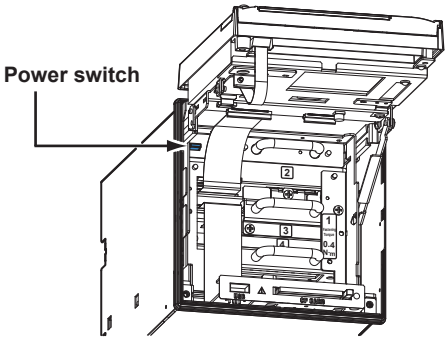

3. Close the Key Case Assembly.
4. Release the latches, then pull out the bezel.
   There are latches that connect with the case on the top of the bezel. Open the bezel slightly at the bottom, then release the latches at the top as you lift the entire bezel upwards. Be sure to read the cautions on the previous page.



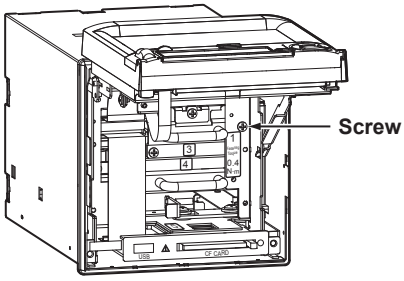
***5.*** Open the bezel upward, then fix in the upright position with the side stay.



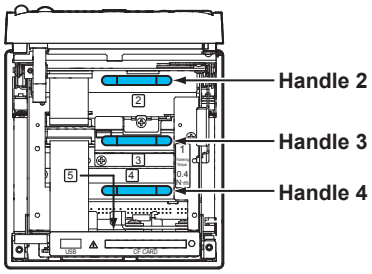

***6.*** Turn OFF the power switch. Turn ON when reinstalling the inner instrument.

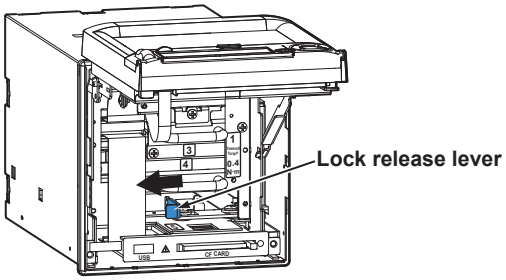
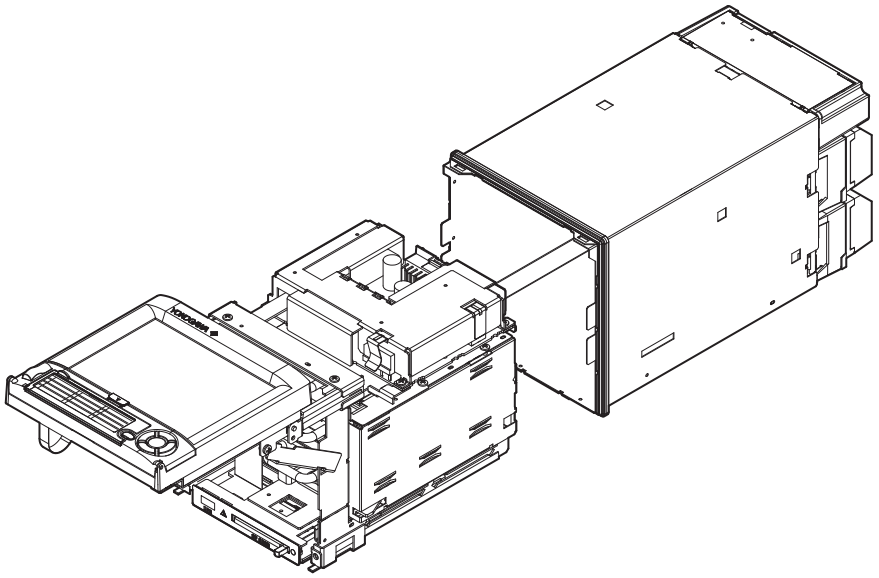



***7.*** Loosen the screw. (Screw tightening torque: 0.4 to 0.5 N·m).




***8.*** Pull out the handles in the order handle 2, handle 3, then handle 4. The handles pull out approximately 8 mm.




***9.*** Pull on handle 2 while pushing the lock release lever to the left, then pull out the inner instrument.